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VIRGIN AND CHILD, BURGUNDIAN, XV CENTURY

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BULLETIN OF THE METROPOLITAN MUSEUM OF ART

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PLANT FORMS IN ORNAMENT

A comprehensive display of Plant Forms in Ornament will be shown during the summer months, from May 9 to September 10, in the Gallery of Special Exhibitions. Here the Museum will bring together a large selection of objects from different parts of the collections and the plants which presumably were the originals of their form or decorative features. The New York Botanical Garden and the Brooklyn Botanic Garden will supply the plants and assure replacements during the period of the exhibition. At the same time two exhibitions will be shown by the Museum's Department of

Prints, one of herbals and one of engraved ornament based upon plant forms.

These exhibitions form the center of a larger undertaking, which will bring into the scheme several other institutions in the city. The New York Public Library, in cooperation with the Museum Library, has in preparation a thorough bibliography of the subject which will be published serially in its Bulletin. The listing will include pertinent material from all the important art libraries in the city. Several schools of design, including certain City high schools, will submit drawings of plant forms in ornament based upon original study in the botanical gardens to be shown at the American Museum of Natural History. A selected number of these drawings will be displayed in other cities by The American Federation of Arts, after the exhibition in New York is concluded.

These various exhibitions and activities centering around the idea of plant forms in ornament are an amplification of a small but significant exhibition of similar purpose held in one of the classrooms of the Museum in 1919. This was arranged in collaboration with the New York Botanical Garden, and its success was largely due to the warm interest of Dr. N. L. Britton, then Director of the Garden, and Mrs. Britton, and to the whole-hearted assistance of Dr. W. A. Murrill, then its Supervisor of Public Instruction. The charm of that first attempt has lingered on to inspire its larger successor.

AN EARLY LANDSCAPE BY GEORGE INNESS

Through its purchase of the Delaware Water Gap¹ by George Inness the Museum illuminates its story of American art with a picture which is at once a document and a poem. Painted in 1861, this lovely example of Inness's early style antedates by several years the Museum's Peace and Plenty and Delaware Valley.

¹ Oil on canvas; h. 36 in., w. 50 3/8 in. Signed in two places: G. Inness 1861. Morris K. Jesup Fund, 1932. Shown this month in the Room of Recent Accessions. Formerly owned by T. B. Clarke; bought from him at private sale by Benjamin Altman; later owned by Michael Friedsam.

In the Delaware Water Gap Inness reveals his art at the moment of transition from the picturesqueness of the Hudson River School to the more impressive breadth and emotional fervor which mark his individual style at its best. From the first Inness's profound seriousness saved him from the sensationalism of such practitioners of landscape painting as Church and Bier-

Hudson River landscapes. A railway locomotive comes puffing round the bend, men floating down the river on rafts are cooking their suppers, even the rainbow is here no cosmic portent, as Church would have had it, but a natural meteorological phenomenon. Inness may have made sketches for the scene as early as 1855, when he walked from St. John's to Stroudsburg on his way



DELAWARE WATER GAP BY GEORGE INNESS

stadt. He took Thomas Cole and Asher Durand as his early models, and these native influences are still visible in his work after his first European sojourns.

In Paris Inness had pondered deeply the styles of the Barbizon men. Here his ardent search for a broader and more sonorous means of emotional expression found satisfaction. It was his French contemporaries who revealed to the young American painter a means of gradual escape from the confined color and brittle detail of the Hudson River School.

In its naive circumstantiality the Delaware Water Gap is perhaps even closer to the pioneer American mind than are the

to Scranton.² A small painting, formerly in the T. B. Clarke Collection and later in that of H. Burlingham, is an earlier and crisper rendering of the same composition. In the Museum's final version, for all its factual detail, the conception is fused and broadened into a tranquil idyl of the American countryside. An afternoon shower has passed leaving the distant gap and placid river valley hushed under the spell of a glowing atmospheric benediction. Inness has seldom expressed so humanly his pantheistic absorption in nature.

HARRY B. WEHLE.

² George Inness, Jr., *Life, Art and Letters of George Inness*, pp. 108-109.

LACE SHAWLS OF THE
NINETEENTH CENTURY

The special exhibition of lace shawls that opens in Gallery H 19 on April 16 offers the Museum an opportunity to show some of the graceful accessories that added so decorative a note to nineteenth-century costume. They comprise, for the most part, the black bobbin-made fabrics to which the name of Chantilly is inevitably attached and the white needlepoint examples made by the Brussels workers, laces which are too recent in date to appear among collectors' pieces but which typify, nevertheless, the best work of the period and represent the last phase of an industry that is now virtually extinct.

The black laces in the exhibition are all grouped under the general name of Chantilly, the district where the black silk lace industry was created. In reality this district was only one of several where such lace was made, but as the first and most renowned of the centers of manufacture it has given its name to this type of work. Under the Empire Chantilly was employed principally in making the white blondes that were the height of fashion. In 1835, when black lace came again into favor, Chantilly turned to the manufacture of large pieces that were used for dresses, fichus, and shawls. This fashion impressed itself quickly upon other lace centers, and Caen and Bayeux abandoned the white laces that they had been manufacturing for years and devoted themselves to the same work. In 1840 the industry was established also in Belgium, in Grammont, and eight years later the manufacture of black silk laces replaced that of white lace in Enghien. Although the work of the Belgian districts was of inferior quality, the laces of Grammont¹ sold at prices so low that they threatened the French manufactories.

The competition offered to Chantilly by these manufactories was serious. Because of its proximity to Paris, it was handicapped by the high price of labor, and, in addition,

¹ The Enghien industry never attained great importance, but Grammont and the later Flemish centers continued to make Chantilly lace until 1870. It was also made in England after 1851.

the work of Bayeux was identical with that of Chantilly in both design and quality. Félix Aubrey, who wrote the official report on lace shown in the Exposition Universelle of 1851 in Paris, stated at that time that it was impossible, even for a trained eye, to distinguish the difference and that the rich Chantilly laces were made in Bayeux with the same degree of perfection. It is not strange, therefore, to find Chantilly superseded finally by its competitors and to read that in 1863 this lace was made principally at Caen and Bayeux.

In the early years, some differentiation appears between the lace of Chantilly and that made in other districts. In the fashion notes of *Le Moniteur de la mode* in 1844 lace offered for sale is referred to as "vrai point de Chantilly." In 1860, however, a flounce offered to the Empress of the French by the city of Bayeux was termed "volant en Chantilly," though it was of local workmanship. On the other hand, lace was shown at the Exposition of Liège in 1905 under the title "dentelles de Grammont dites Chantilly." It would seem impossible, in view of the general similarity of all these laces and the confusion that exists regarding their exact identity, to discriminate between the work of the different centers. The shawls in the Museum collection therefore may be, in part at least, the work of Caen or Bayeux "dites Chantilly."

Chantilly lace is made of a dull, lusterless silk called *grenadine d'Alais*. The pattern is worked in the star-shaped stitch known as *fond Chant*, and with this is combined the round twisted stitch that forms the ground. A cordonnet of flat untwisted thread outlines the pattern, and the design, like that of all laces of the kind during this period, consists of a graceful central floral ornament framed in an elaborate and rather heavy border.

Speculation must often arise regarding the original use of these delicate laces. In reality they served the same purpose—ceremonial and seasonal—that they might today. In 1845 Paris sponsored black lace shawls for evening wear, and high praise was accorded by a fashion reviewer in that year to a ball gown over which was thrown a magnificent black Chantilly shawl. These

shawls were favored also for summer wear; The Illustrated London News in 1853 quotes as a Paris fashion black lace shawls to complete the summer toilet. In the London International Exhibition ten years later black lace shawls were shown in number.

They were deemed fashionable also in America. Godey's Lady's Book in 1863 considered them very stylish and three years later exclaimed over the perfection which

old Brussels needlepoint with the ground and pattern made in one piece. The Brussels workers, who for over a century had been making bobbin grounds with needlepoint flowers applied, reverted to this earlier technique when machine net replaced the handmade fabric and invented for these delicate and filmy laces the name *point de gaze*. Their design, like that of their bobbin-made contemporaries, is chiefly floral, so



SHAWL OF NEEDLEPOINT LACE, POINT DE GAZE
FRENCH, XIX CENTURY

they had attained. References to them occur for several years, principally, it may be noted, during the summer months. Handmade lace little by little gave way to the machine products, until, in 1882, imitation lace, formerly despised, was not only tolerated but even admired.

The white shawls, which appear too fragile to have survived even careful wear, are of two kinds, the *point appliqué* with bobbin-made motives applied to a machine net and the needlepoint pieces, termed from their diaphanous ground *point de gaze*. This lace, which has been attributed to the last half of the century, is a revival of the

much so, in fact, that the name rose point has been bestowed upon this lace, the "old rose point" that so frequently appears in modern wedding costumes. The beautiful piece with the fern pattern that is illustrated represents the finest type of this work. Because of the delicacy of the ground, the firm quality of the *toile*, and the skillful use of light and shade, it is thought to have been made in France, which is not improbable, since workshops were maintained in France as well as in Belgium by companies manufacturing and exhibiting these shawls.

The use of lace for bridal veils was not uncommon in the mid-nineteenth century. It

appears, naturally in its most luxurious aspect, at royal weddings. Thus the Grand Duchess Olga, niece of the Emperor of Russia, wore in 1868, at her marriage to George I of Greece, over her dress of silver brocade a point lace veil. Another wedding dress of this period, though presumably not made for royal use, was completed by a veil of Brussels lace.

This custom was not confined to Europe; it was followed in America as well. Godey in 1867 showed a group of brides which included one figure wearing a veil of *point appliqué*. At this time a trousseau of lace included, among flounces, edgings, barbe, fan, handkerchief, and parasol, a shawl to be draped as a veil at the wedding. The wedding lace of Catalina Juliana Mason, who married Theodore Bailey Myers in New York in 1847, is included in the present exhibition.

Lace for wedding veils was easily obtainable in America. At A. T. Stewart's in 1863 were shawls of Brussels lace, of *appliqué* and needlepoint lace combined, and of *point de gaze* to be worn as shawls or bridal veils. In another shop is found a bridal set of point lace with floral garlands, and here again is a large piece intended for a veil or shawl. Lace of this kind was used as well to accompany evening dress. Witness the instance of Mrs. Pullman of Chicago, who wore at a reception in Washington in 1872 what was described as a costly point lace shawl.

To the pieces on exhibition has been added the silk shawl in polychrome needlepoint attributed to the wardrobe of Empress Eugénie and lately shown in the Room of Recent Accessions. The exhibition will continue through October 30.

FRANCES LITTLE.

A LATE GOTHIC SCULPTURE

Among the French fourteenth-century ivory statuettes of the Virgin and Child in the Morgan Collection (Gallery F 3), there is one, dating from the second half of the century, that is quite untypical. The others repeat with little variation the established conventions for representing the Virgin and Child, but this statuette is marked by nov-

elty. It represents the Virgin seated, supporting on her knees a cradle from which the Child reaches up to His mother's breast, while she busies herself with His swaddling bands.

This is a genre scene, pure and simple, entirely devoid of religious significance save for the crown on the Virgin's head, an incongruous survival from the traditional representations of the subject. In twelfth-century sculpture the Virgin appears as the Queen of Heaven, holding in stiff, ceremonious attitude the Divine Child upon her knees. Subsequently, the theme becomes more humanized: maternal affection is stressed, but with dignity; the Virgin is still a great lady. The realistic movement, gathering momentum in the latter part of the fourteenth century, effected a further change. The Queen of Heaven, as we note in the Morgan ivory, has now become merely a good housewife happily tending her child. This is the type that was to persist, in general, throughout the following century and that is so delightfully exemplified in the monumental Burgundian sculpture,¹ lately acquired by the Museum, which occasions these notes (see the cover and the illustration on the following page).

It was in Burgundy that the realistic movement in sculpture came to ripe expression, in the work of Claus Sluter. This sculptor of Dutch extraction is celebrated for his Well of the Prophets and other sculptures at Dijon, where he worked at the end of the fourteenth century and in the first years of the fifteenth. Certainly in Sluter's style, and probably by the master himself, is a beautiful, although mutilated, statue of the Virgin and Child, exhibited in the hall of the Morgan Wing. We are also fortunate in possessing an imposing statue of Saint Paul (Gallery C 20), attributed to Sluter's nephew and coworker, Claus de Werve,² as well as many other examples of fifteenth-century sculpture either of Burgundian origin or showing the influence of the school, which was widespread.

¹ Acc. no. 33.23. Shown this month in the Room of Recent Accessions.

² In the opinion of G. Troescher, the author of a recent book on Claus Sluter, this statue, as well as the Morgan Virgin and Child, is the work of Sluter himself.

The most flourishing period of the Burgundian school was the first half of the fifteenth century, although distinguished work was still produced in the later years of the century. Characteristic of the school are the tendency toward massive proportions in the figures and the rendering of the drapery in ponderous, complicated folds,

The Virgin is shown seated on a cushioned bench, with the Christ Child on her knees. Looking up engagingly, He touches a page of the open book held in her right hand. The group is somewhat over life size, measuring 53 $\frac{1}{4}$ inches in height, 41 $\frac{1}{2}$ inches in width, and 27 $\frac{3}{4}$ inches in depth. An iron ring on the back indicates that it



DETAIL OF VIRGIN AND CHILD
BURGUNDIAN, XV CENTURY

suggestive of thick woolen materials. Details such as hair, wrinkles, and veins are imitated with careful precision. At first the figures are strongly individualized but they become less so as the pendulum swings back from the extremes of realism. The later sculptures of the school are more generalized, less intensely conceived. What may be called the amiability of early Gothic sculpture appears again. This trait is particularly notable in our new group, which may be assigned to about the third quarter of the fifteenth century.

was intended to be placed against a wall. The material of the sculpture is limestone, originally completed with painting on the front and sides. It was repainted several times, the usual fate of mediaeval cult sculpture when time had obscured its first fresh colors. We may, as archaeologists, deplore the practice; but, after all, from the point of view of the worshiper a church is not a museum, and dirt, however venerable, is not appropriate to the house of God. Fortunately, from the museum point of view, it is usually possible to remove, wholly or in

part, the later coats of paint and to reveal the original coloring beneath. Before its purchase by the Museum our group had undergone a cleaning of this kind, with the result that much of the old paint may now be seen, although indications of the successive repaintings still remain.

The Virgin wears a white head veil. Her hair was originally gilded. Her mantle is blue and gold, lined with red; her gown, blue with traces of later red. The Child's dress is green, patterned with gold; the lining, white. The bench is green, repainted red, with blue and gold moldings; the cushion, green with gold tassels. The scroll hanging down over one end of the bench is white with an inscription² in black. The part of the border of the Virgin's veil which projected over the brow has been broken off. The Child's nose and upper lip have been damaged and restored. There are also a few minor injuries, but on the whole the group is in remarkably fine condition.

JOSEPH BRECK.

A STATUETTE OF AN AMAZON

For more than eighty years archaeologists have tried to solve the problem of assigning three types of Amazons, each preserved in several Roman copies, to the three famous sculptors mentioned in Pliny's well-known tale—Polykleitos, Pheidias, and Kresilas.¹ The type represented by the Lansdowne Amazon recently acquired by the Museum² has on good evidence been attributed to Polykleitos. The assignment of another type, that generally referred to as the Mattei one,³ was complicated by the fact that

² AV[E] · MA · RIA · ET [?] / ANTE · SECULA / CREATA · SUM + This is followed by three lines of smaller lettering so obliterated as to be indecipherable. An old photograph of the group, taken before it was cleaned, showed that the inscription had been completely repainted to read: A/Marie/plaine [sic] de/grâce, fut/crée [sic] / bienheure, use avant / les/siècles.

¹ The fourth sculptor mentioned—Phradmon—is comparatively unknown, and so the fourth type of Amazon, preserved in only one or two copies, has naturally been associated with him.

² Cf. BULLETIN, vol. XXVIII (1933), pp. 1 ff.

³ Named after the example in the Vatican formerly in the Villa Mattei.

the head was missing. Though at least six Roman copies of this type were known, none of them had the head preserved except a herm from Loukou which was of too generalized a character and too battered to serve as certain evidence.⁴ Speculation has naturally been active as to whether a separate head existed which could be joined to the body. Various candidates appeared from time to time; but none carried enough conviction to stop the search of the five bodies for their head.

At last the problem has been solved. A figure of this type with a head actually belonging to it has been found, and the Metropolitan Museum has become its fortunate possessor. It is exhibited this month in the Room of Recent Accessions and later will be placed in the Sixth Classical Room. The statuette is of marble, about one-third life size,⁵ beautifully worked and with the surface in excellent condition (figs. 1-3). Parts of the legs and of the arms are missing; but enough remains to give a new impression of the beauty and vitality of the original.

An Amazon wearing a short chiton is standing with her weight on the right leg, the left placed forward and a little sidewise. The right arm was raised and brought forward, the left lowered and held out a little at the side. Every line of the body is expressive of movement. The figure is composed, so to speak, like the letter S, the head and upper body forming a curve in one direction, the lower body and legs a curve in the opposite direction. The bow-like folds of the drapery, the posture of arms and legs, the curve of the long neck, and even the arrangement of the hair carry out and reinforce this curvilinear design, imparting to

⁴ Besides the statue in the Vatican and the herm from Loukou in the National Museum, Athens, there are statues in the Museo Capitolino, Rome; the Museo di Antichità, Turin; the Provinzialmuseum, Trier; and the collection of Lord Leconfield, Petworth. The fragmentary one from Baiii mentioned by Sogliano in *Μουσείον*, vol. II (1924-1925), pp. 1 ff., figs. 1, 2, 4, has been shown to be of a different type; cf. Arndt, *Loeb Festschrift*, p. 4.

⁵ Acc. no. 32.116. H. as preserved 20¹¹/₁₆ in. (52.3 cm.); h. of head 4 in. (10.2 cm.). The marble is Pentelic and has the usual cracks. The head and right shoulder were broken from the body, but the fractures fit. The plaster fillings at the joints are the only restorations.

the figure an amazing elasticity and grace.

The clue to the meaning of this unusual pose was long ago recognized in the representation on a gem (now lost, but preserved in a drawing; cf. fig. 4) which supplies the whole composition. It shows an Amazon grasping a long pole or spear with both hands, the right high above the head⁶—

the larger statues brings out more clearly the underlying compositional scheme. The right armhole is larger than in the statues, and so exposes most of the right breast. Moreover the quiver has been suppressed, and also the supporting tree trunk. Such variations and simplifications are frequent in statuettes copied from larger originals.⁸



FIGS. 1-3. STATUETTE OF AN AMAZON
GREEK OR ROMAN COPY OF A WORK ATTRIBUTED TO PHEIDIAS

evidently preparing for some action, perhaps to swing herself on her horse.⁷

Compared with the statues of this type our statuette shows a number of variations, especially in the drapery. The omission of the multitudinous crinkly folds present in

⁶ In our statuette more of the right arm is preserved than in any of the other copies; it closely tallies with the right arm in the drawing.

⁷ Xenophon, *On the Art of Horsemanship* VII. 1: "... whether he means to mount by holding on to the mane near the ears or to spring up with the help of the spear" (translated by Marchant).

We must remember that reductions in ancient times were made free-hand, not mechanically, and a sensitive artist would be apt to introduce changes appropriate to the reduced scale.

It is with unusual interest that we look at the head of this Amazon, for which we have waited so long. It corresponds in a general way with that on the gem and that on the Loukou herm, showing the essential trustworthiness of their evidence. The hair

⁸ Lippold, *Kopien und Umbildungen griechischer Statuen*, pp. 147 ff.

is parted in the middle, brought in gentle waves over the ears, and knotted behind. The expression of the face is radiant and alert. Our Amazon is clearly not suffering from a wound, as are the Berlin-Lansdowne and Capitoline ones, but is tense with action.

Our good fortune does not end with having found a head for a statue. The evidence that this type of Amazon reproduces an original by Pheidias, as surmised by many, now becomes overwhelmingly strong.



FIG. 4. AMAZON, ON A GEM
(FROM A DRAWING)

First, our statuette is a new revelation of the beauty of the original and gives a fresh meaning to the words of Lucian: "Which among the works of Pheidias did you praise most highly? Which but the Lemnian Athena . . . and the Amazon who leans upon her spear." Whereas one might have hesitated to believe that the statues of this type of Amazon hitherto known represented one of the highest achievements of Pheidias, our statuette clearly reproduces a work of singular beauty.

And we can be more specific. In Lucian's *Eikones* (written A.D. 162-164), where Lykinos and Polystratos describe a composite figure with parts borrowed from famous masterpieces, Lykinos proposes to borrow from the Cnidian Aphrodite by Praxiteles "the arrangement of the hair, the forehead, the fair line of the brows . . . and the

eyes, . . . And Pheidias will furnish . . . the setting of the lips, and the neck, taking these from his Amazon." Now the neck in our statuette is particularly attractive, forming a beautiful curve with the head⁹; and the finely shaped, parted lips, though rather summarily worked in our small figure, suggest a lovely model. With their graceful refinement they would compose well with the eyes and brow of the Cnidian Aphrodite.

Our statuette, therefore, exactly corresponds with all we know of the Pheidias Amazon. Moreover it furnishes new evidence that this type cannot be attributed to either Kresilas or Polykleitos. Those who have tried to identify the type with Kresilas's Amazon¹⁰ described by Pliny as wounded have argued that a wound must have been indicated in color on the upper left leg—since it is not carved on any of the extant copies. The sense of movement in our statuette and the radiant expression conclusively show that it cannot represent a wounded Amazon, and therefore is not a copy of the one by Kresilas. The assignment of the type to Polykleitos appeared unlikely even when only the body was known; our head, so different from the Polykleitan ones, is a convincing argument against the attribution.

We can confidently claim, therefore, that we have in our statuette a reproduction of one of Pheidias's greatest works. By its discovery not only has a long-standing archaeological problem been solved but our understanding of Greece's greatest sculptor has been considerably enlarged; for our little figure and those reproducing the Athena Parthenos are the only certain copies in the round which have survived of the works of Pheidias. They must form the foundation of our study of the Pheidias style. The obvious similarity of our statuette to the sculptures of the Parthenon is significant.¹¹

GISELA M. A. RICHTER

⁹ From the portions of the neck preserved in the Turin and Petworth copies, Furtwängler thought that the head must have been turned to the left, not taking into account a possible curve.

¹⁰ Cf. for instance Noack, *Jahrb. d. deutschen arch. Inst.*, vol. 30 (1915), pp. 158 ff.

¹¹ A fuller discussion of this statuette and the archaeological problems involved is to appear in the *American Journal of Archaeology*.

PARTHIAN AND SASANIAN ART

Two important periods in the history of Near Eastern art—the Parthian and the Sasanian—connecting the Hellenistic and Islamic periods, have been hitherto insufficiently represented in our Museum. But this gap has now been filled by an important Parthian relief recently purchased and by the objects acquired through the Museum's participation, in the winter of 1931–1932, with the German State Museums, in the second expedition to Ctesiphon, in Mesopotamia.¹ The Parthian relief and the

late Parthian period (II–III century A.D.).² The palace was an imposing structure of stone, built in strong Oriental style, with several large barrel-vaulted halls and arched doorways richly ornamented.

The decoration of the palace reveals the mixture of Hellenistic and Oriental motives so characteristic of Parthian art. The jambs of the griffin doorway, which connects the North Hall with Room 10, are adorned with acanthus and vine scrolls enlivened with putti and birds. The griffin relief upon the lintel was still in situ when Andrae³ visited the palace; it was later cut



FIG. 1. RELIEF FROM A DOOR LINTEL FROM THE PALACE AT HATRA
PARTHIAN, II-III CENTURY A.D.

most interesting of the Ctesiphon finds, shown this month in the Room of Recent Accessions, form the nucleus of a pre-Islamic section, to be arranged later in one of the Near Eastern galleries.

The Parthian relief (fig. 1) comes from the palace at Hatra, a fortress city situated in the Mesopotamian desert between the Euphrates and Tigris Rivers, southwest from Mosul. Governed by Arab kings who were vassals of the Parthian empire, Hatra was unsuccessfully besieged by the Romans, in A.D. 117 under Trajan and in A.D. 200 and 201 under Septimus Severus. It was finally destroyed by the Sasanian king Shapur I (A.D. 242–272). The ruins of Hatra were investigated by the German Expedition to Assur and published by Walter Andrae, who assigns most of them to the

late Parthian period (II–III century A.D.).² The palace was an imposing structure of stone, built in strong Oriental style, with several large barrel-vaulted halls and arched doorways richly ornamented.

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¹ J. Upton, *BULLETIN*, vol. XXVII (1932), pp. 188–197.

² Hatra, vols. I, II. Leipzig, 1912.

³ *Op. cit.*, vol. II, pl. XII.

and the graceful curves of the necks and the bodies of the griffins also remind one of the style of the Sasanian period, which began with Ardashir I, who conquered all Persia and Mesopotamia, proclaiming himself "the king of kings of the Iranians" in A.D. 226.

The Sasanian dynasty (A.D. 226-637) inaugurated one of the most brilliant periods in the history of Persian art, not only in painting and sculpture but also in minor arts.⁴ The excavations at Ctesiphon, one of

The stucco reliefs from Ctesiphon are decorated with a great variety of motives. A number of panels from the mound el-Ma'aridh show dancers and musicians which are probably parts of larger compositions. In a house excavated on the mound Umm ez-Za'tir, the expedition found panels decorated with various animals, gazelles, bears, and wild boars (cf. fig. 2), in flight. The boars especially recall the famous rock sculptures at Tak-i-Bustan, near Kirman-



FIG. 2. STUCCO TILE FROM CTESIPHON
SASANIAN, VI CENTURY A.D.

the capitals of the Sasanian empire, revealed some of the splendor of the famous palace, Tak-i-Kisra, and the rich stucco decoration of several private residences. Half of the Ctesiphon finds remained in the Baghdad Museum, the other half was divided between the Metropolitan Museum and the Islamic collection in Berlin. Our share consists of numerous stucco panels and ceramics which were assembled and restored in Berlin under the skillful guidance of Professor Ernst Kühnel, the field director of the expedition. Besides these finds the Museum received a number of interesting stucco ornaments and pottery from the first expedition, conducted in the winter of 1928-1929.⁵

⁴ F. Sarre, *Die Kunst des alten Persien*; E. Herzfeld, *Am Tor von Asien*.

⁵ A. Reuther, *Die Ausgrabungen der deutschen Ktesiphon-Expedition*; idem, *Antiquity*, vol. III (1929), pp. 434 ff.

shah, where the left wall of the main grotto represents King Khusrau II (A.D. 590-629) hunting wild boars. The drawing of the boars both in our stucco and in the rock sculptures reveals the close observation of nature often evident in Sasanian art.

Many ornamental devices created by artists of the Sasanian period continued in Persian art for centuries. The favorite motive was the palmette, a stylized form resembling a leaf or a flower. Some of the Sasanian palmettes are derived from vine leaves and are used in various combinations. A simple pattern is formed by a row of palmettes joined by arcs, as seen on an arch-volt and on a large rosette in openwork, found in one of the houses in el-Ma'aridh and probably used as a window. These palmettes have seven deeply incised lobes which produce a striking effect of light and dark. A very large stucco rosette (3½ ft. in

diam.)⁶ found near the palace during the first campaign at Ctesiphon is similarly decorated. Half palmettes and trefoil and flower palmettes also occur in Sasanian art. The outer part of a splendid archivolt of a niche found in one of the houses at el-Ma'aridh has a design of trefoils and rosettes; the inner part consists of a round molding carved as a trunk of a tree. Such moldings, varying in size and stylization, are a characteristic feature of the Ctesiphon arches. A fine example of the palmette tree, often

an interesting link between the late Sasanian and the early Islamic style of the Omayyad period (VIII century A.D.), as shown in the carvings of the prayer pulpit in the mosque Sidi Okba at Kairwan in North Africa and the wooden panel from Takrit on exhibition in Gallery E 14 A. Another Sasanian motive which often occurs in Islamic ornament of the eighth century is the pair of wings originally symbolizing the divine power of Sasanian kings. A stucco tile from Umm ez-Za'tir (fig. 4) is decorated with



FIGS. 3, 4. STUCCO TILES FROM CTESIPHON, VI CENTURY A.D.

found in Sasanian art, appears on a stucco tile from el-Ma'aridh. The tree bears palmettes, rosettes, and pomegranates, and symmetrically placed in the branches are four birds.

The comparison of the Ctesiphon stucco patterns with the decoration of other Sasanian monuments indicates that the former are not earlier than the sixth century. A number of stucco tiles (cf. fig. 3) found during the first campaign at el-Ma'aridh⁷ form

wings supporting a monogram in Pahlavi writing.

Other Sasanian and early Islamic objects acquired by the Museum through the Ctesiphon expedition are a unique alabaster relief representing a wild dog attacking a gazelle, glazed and unglazed ceramics, glass, and ivories. Worthy of special mention are a graceful vase⁸ with a blue glaze and a dish with a blue-green glaze, the shape and decoration of which imitate a bronze vessel.

M. S. DIMAND.

⁶ Upton, *ibid.*, p. 103, fig. 10.

⁷ Reuther, *op. cit.*, fig. 18.

⁸ *Ibid.*, fig. 11.

NOTES

MEMBERSHIP. At a meeting of the Board of Trustees, held March 20, 1933, the following persons were elected: ANNUAL MEMBERS, Mrs. Alfred B. Clark, Mrs. H. W. Ford, Mrs. Arthur Oppenheim, Mrs. Roy C. Van Etten.

THE AMERICAN ORIENTAL SOCIETY will hold its annual meeting in New York from April 18 to 20. The afternoon session on Wednesday, April 19, will be held at the Museum in Classroom A at 2:30 and will be open to the public. Details of the program may be obtained at the Information Desk.

THE EGYPTIAN EXPEDITION. The report of the Egyptian Expedition for 1931-1932, which is published separately as Section II of this issue, consists of two articles, a report by Ambrose Lansing of the excavations at Lisht, and an account by Norman de Garis Davies of the progress of the graphic division of the work.

BEQUESTS OF MONEY. The Museum has received by bequest from William Colgate \$30,000 and from Henry Walters, Second Vice-President of the Museum from 1913 to 1931, a part of his residuary estate. These unrestricted bequests may be noted with particular gratitude in this season of marked decrease in the funds available for administration and for the purchase of objects of art.

A LECTURE ON COLOR. At a meeting of the Antique and Decorative Arts League and the Art-in-Trades Club held at the headquarters of the latter at the Hotel Lombardy on March 2, Miss Grace Cornell, Associate Instructor at the Museum, gave a lecture on color. The illustrative material for the lecture was arranged in a setting by Mrs. Lucille Arkins Thompson.

TALKS FOR MEMBERS AT THE CLOISTERS. A visit to The Cloisters is especially pleasant in May, when the flowers are at their best. On four days during the month Members will be given an opportunity to study the collections under the guidance of Miss Duncan:

Monday, May 1, at eleven o'clock
Friday, May 5, at three o'clock
Monday, May 8, at eleven o'clock
Friday, May 12, at three o'clock

THE MICHAEL FRIEDSAM COLLECTION was on view as a unit in the Gallery of Special Exhibitions from November 15, 1932, until April 9 of the present year. When the collection was accepted the Museum agreed to the suggestion of the Executors of Colonel Friedsam's Estate that, when this exhibition was over, while part of the collection was to be distributed through the appropriate departments of the Museum, a nucleus would be kept together in one gallery. It seems most appropriate that fifty primitives of the Flemish, French, and German schools should form such a nucleus of Colonel Friedsam's collection, and for the present they are hung in Gallery C 36. Among them are the Annunciation by Petrus Cristus, Lionello d'Este by Roger van der Weyden, the triptych by Gerard David, the altarpiece by Bellegambe, the Annunciation by Joos van Cleve, and the portraits of Count Egmont and his wife. As soon as feasible, places will be found for the other outstanding pictures of the collection in the galleries containing paintings of the same schools and periods.

The examples of European decorative arts will be reëxhibited as soon as possible, but since the mediaeval and Renaissance galleries in Wings A and C, where most of the objects will be shown, are being rearranged, it may be some time before the new installation is completed.

LIST OF ACCESSIONS AND LOANS

FEBRUARY 6 TO MARCH 5, 1933

ANTIQUITIES—NEAR EASTERN

Gift of Alfred V. de Forest, Lockwood de Forest, and Judith de Forest Soule (1); *Purchases* (50).

ARMS AND ARMOR

Purchases (5).

BOOKS—THE LIBRARY

Gifts of Archaeological Survey of India (1), *Arxiu d'Arqueologia Catalana* (2), *The Exposition of Indian Tribal Arts, Inc.* (2), *The Hispanic Society of America* (1), *Henry N. Holmes, Lord Mayor of Norwich, England* (1), *Jobneck and Seeger* (1), *Dr. Thor Keilland* (1), *Mr. and Mrs. Alfred Day Pardee* (1), *Charles Scribner's Sons* (1), *Jacob Tostrup* (1), *Eamon de Valera* (1), *Miss Gertrude Whiting* (1).

CERAMICS

Gift of the Misses Sarah and Joanna Williams (2).

GLASS (OBJECTS IN)

Gifts of Mrs. J. Insley Blair (1), *Mr. and Mrs. Minturn T. Wright* (1).

PAINTINGS

Purchases (2).

PHOTOGRAPHS—THE LIBRARY

Gifts of A. and M. Karagheusian, Inc. (8), *Arthur Hungerford Pollen* (2), *Marcus T. Reynolds* (6), *R. A. Riches* (2).

PRINTS AND ILLUSTRATED BOOKS—DEPARTMENT OF PRINTS

Gifts of Anonymous (1 book), *Anonymous* (2 copperplates), *Mrs. Bella C. Landauer* (2 prints, 3 books).

REPRODUCTIONS

Gift of The Toyo Bunko (The Oriental Library), through *I. Shida* (2).

SCULPTURE

Gift of Charles B. Hoyt (1).

TEXTILES

Gifts of Reginald Adams (1), *Mrs. Van Santvoord Merle-Smith* (81).

WOODWORK AND FURNITURE

Gift of Mr. and Mrs. Luke Vincent Lockwood (1).

CERAMICS

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METALWORK

Anonymous Loan (2).

WOODWORK AND FURNITURE

Loans of American Antiquarian Society (1), *Miss Helen L. Bayley* (1), *Mrs. J. Insley Blair* (2), *Miss Margaret Danforth* (1), *Francis P. Garvan* (1), *Wadsworth Atheneum and Morgan Memorial* (3).

EXHIBITIONS AND LECTURES

APRIL 17 TO MAY 14, 1933

American Japanned Furniture	Alexandria Assembly Room	Through April 30
Lace Shawls of the Nineteenth Century	Gallery H 19	Through October 30
Plant Forms in Ornament	Galleries D 6 and K 37-40	May 9-September 10
APRIL		HOOR
22 Story-Hour for Members' Children: A Girl Who Loved All Animals. Anna Curtis Chandler		10:15
29 Story-Hour for Members' Children: When a Strange Visitor Met Louis, the Grand Monarch, at Versailles. Anna Curtis Chandler		10:15
MAY		
1 & 8 Gallery Talks for Members at The Cloisters. Mabel Harrison Duncan		11:00
5 & 12 Gallery Talks for Members at The Cloisters. Mabel Harrison Duncan		3:00
Yale Cinema Films Showings: Chronicles of America, Tuesdays, April 18, May 2, at 2:30 p.m.		
Museum Cinema Films Showings, Thursdays at 2:30 p.m.		
Story-Hours for Boys and Girls, by Anna Curtis Chandler, Saturdays, April 20, May 6, at 1:45 p.m., Sundays, April 23, 30, May 7, 14, at 1:45 and 2:45 p.m.; by Agnes K. Inglis, Saturday, April 22, at 1:45 p.m.; by Susan Scott Davis, Saturday, May 13, at 1:45 p.m.		
Gallery Talks, Saturdays at 2:30 p.m.: April 22, Oriental Paintings, by Mabel Harrison Duncan; April 29, Lace, by Ethelwyn Bradish; May 6, Eighteenth-Century French Furniture, by Ethelwyn Bradish; May 13, Prints, by Marion E. Miller.		
Gallery Talks, Sundays at 2:30 p.m.: April 23, Mediaeval Ivories—Religious and Romantic, by Margaret B. Freeman; April 30, The Mediaeval Stone Carver, by Mabel Harrison Duncan; May 7, The Mediaeval Home, by Mabel Harrison Duncan; May 14, Tapestries, by Ethelwyn Bradish.		
Radio Talks by Huger Elliott: WOR, Saturdays at 12:30 p.m.; WRNY, Tuesdays, April 18, May 2, at 5:45 p.m.; WNYC, Thursdays, April 27, May 11, at 8 p.m.		

BULLETIN OF THE METROPOLITAN MUSEUM OF ART

LIBRARY M. M. A.
APR 18 1933

THE METROPOLITAN MUSEUM OF ART

Incorporated April 13, 1870, "for the purpose of establishing and maintaining a Museum and library of art, of encouraging and developing the study of the fine arts, and the application of arts to manufacture and practical life, of advancing the general knowledge of kindred subjects, and, to that end, of furnishing popular instruction."

LOCATION

MAIN BUILDING. Fifth Avenue at 82d Street. Buses 1-4 of the Fifth Avenue Coach Company pass the door. Madison Avenue cars one block east. Express station on East Side subway at Lexington Avenue and 86th Street. Station on Third Avenue elevated at 84th Street. Cross-town buses at 79th and 86th Streets.

BRANCH BUILDING. The Cloisters, 608 Fort Washington Avenue. Fifth Avenue Bus 4 (Northern Avenue) passes the entrance. Also reached by the Eighth Avenue subway to 160th Street-Overlook Terrace station. Take elevator to Fort Washington Avenue exit and walk south.

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MEMBERSHIP

BENEFACTORS, who contribute or devise	\$50,000
FELLOWS IN PERPETUITY, who contribute	5,000
FELLOWS FOR LIFE, who contribute	1,000
CONTRIBUTING MEMBERS, who pay annually	250
FELLOWSHIP MEMBERS, who pay annually	100
SUSTAINING MEMBERS, who pay annually	25
ANNUAL MEMBERS, who pay annually	10

PRIVILEGES—All Members are entitled to the following privileges:

A ticket admitting the Member and his family, and non-resident friends, on Mondays and Fridays.

Ten complimentary tickets a year, each of which admits the bearer once, on either Monday or Friday.

The services of the Museum Instructors free.

An invitation to any general reception given by the Trustees at the Museum for Members.

The BULLETIN and the Annual Report.

A set of all handbooks published for general distribution, upon request at the Museum.

Contributing, Fellowship, and Sustaining Members have, upon request, double the number of tickets to the Museum accorded to Annual Members; their families are included in the invitation to any general reception; and whenever their subscriptions in the aggregate amount to \$1,000 they shall be entitled to be elected Fellows for Life and to become members of the Corporation. For further particulars, address the Secretary.

ADMISSION

MUSEUM GALLERIES and THE CLOISTERS free except on Mondays and Fridays, when a fee of 25 cents is charged to all except Members and those holding special cards—students, teachers and pupils in the New York City public schools, and others. Free on legal holidays. Children under seven at the main building and under twelve at The Cloisters must be accompanied by an adult.

HOURS OF OPENING

MAIN BUILDING AND THE CLOISTERS:	
Saturdays	10 a.m. to 6 p.m.
Sundays	1 p.m. to 6 p.m.
Other days	10 a.m. to 5 p.m.
Holidays, except Thanksgiving & Christmas	10 a.m. to 6 p.m.
Thanksgiving	10 a.m. to 5 p.m.
Christmas	1 p.m. to 5 p.m.
The American Wing & The Cloisters close at dusk in winter.	
CAFETERIA:	
Saturdays	12 m. to 5:15 p.m.
Sundays	Closed.
Other days	12 m. to 4:45 p.m.
Holidays, except Thanksgiving & Christmas	12 m. to 5:15 p.m.
Thanksgiving	12 m. to 4:45 p.m.
Christmas	Closed.
LIBRARY: Gallery hours, except Sundays during the summer and legal holidays.	
MUSEUM EXTENSION OFFICE: 10 a.m. to 5 p.m., except Sundays and legal holidays.	
PRINT ROOM AND TEXTILE STUDY ROOM: Gallery hours, except Saturday afternoons, Sundays, and legal holidays.	

INSTRUCTORS

Members of the staff detailed for expert guidance at the Museum and at The Cloisters. Appointments should be made at the Museum through the Information Desk or, if possible, in advance by mail or telephone message to the Director of Educational Work. Free service to Members and to the teachers and students in the public schools of New York City; for others, a charge of \$1.00 an hour for from one to four persons and 25 cents a person for groups of five or more. Instructors also available for talks in the public schools.

PRIVILEGES AND PERMITS

For special privileges extended to teachers, pupils, and art students at the Museum and at The Cloisters, and for use of the Library, classrooms, study rooms, and lending collections, see special leaflets.

Requests for permits to copy and to photograph should be addressed to the Secretary. No permits are necessary for sketching and for taking snapshots with hand cameras. Permits are issued for all days except Saturday afternoons, Sundays, and legal holidays. See special leaflet.

INFORMATION DESK

At the 82d Street entrance to the main building. Questions answered; fees received; classes and lectures, copying, sketching, and guidance arranged for; and directions given.

PUBLICATIONS

The Museum publishes and sells handbooks, colorprints, photographs, and postcards, describing and illustrating objects in its collections. Sold at the Information Desk and through European agents. See special leaflets.

CAFETERIA

In the basement of the main building. Open for luncheon and afternoon tea daily, except Sundays and Christmas. Special groups and schools bringing lunches accommodated if notification is given in advance.

TELEPHONES

The Museum number is Rhinelander 4-7600; The Cloisters branch of the Museum, Washington Heights 7-2735.

THE METROPOLITAN MUSEUM OF ART
THE EGYPTIAN EXPEDITION, 1931-1932



BIRDS IN TREE. DETAIL OF FOWLING SCENE
FROM TOMB NO. 3 AT BENI HASAN

SECTION II OF THE BULLETIN OF THE METROPOLITAN MUSEUM
OF ART, NEW YORK, APRIL, MCMXXXIII

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THE METROPOLITAN MUSEUM OF ART
1933

THE EGYPTIAN EXPEDITION

1931-1932

THE MUSEUM'S EXCAVATIONS AT LISHT

THE main work of the Egyptian Expedition during the last season took place at Lisht. Here we resumed the excavation, interrupted since 1924, of the more southerly of the two pyramids, that of Se'n-Wosret I, the second king of the Twelfth Dynasty, who reigned in the twentieth century B.C.

The work planned for the season was the clearance of the areas about the pyramid which had not been investigated during the course of earlier excavations, and, more particularly, a search for the tombs of the ladies of the royal family. These we had expected to find either on the west side of the pyramid—assuming that the custom set by Amen-em-hêt I at the northern pyramid at Lisht was followed by his successor—or on the north side, if it was Se'n-Wosret I who had started a custom followed by two of his successors at Dahshûr and a third at el Lâhûn. The French excavators who worked at Lisht in 1895 had reported that in the area northwest of the pyramid a deep deposit of loose sand lay below the hard upper stratum of the desert, and our own work had verified this fact.¹ In view of the difficulties which tomb diggers were likely to meet when working in this stratification² it seemed likely that they might have chosen another part of the pyramid temenos for the location of the tombs destined for the royal family. One of the possibilities was the inner court formed by the decorated limestone wall which completely encircles the pyramid.³ It seemed probable that the heavy limestone paving of this court might

conceal the entrances to the tombs which we hoped to find. The excavations of 1923-1924 had shown that at two points at least on the west side of the pyramid the court pavement was intact. Should the tombs be situated here, it seemed not unreasonable to expect that they might have escaped being plundered.

It was determined to concentrate our work on the west side of the pyramid both because of the hope that we might find royal tombs in the pavement there and because of the certainty that a considerable number of fragments of the decorated panels of the inclosure wall would be recovered.

The fine limestone used for the casing of the pyramid had attracted quarrymen of later periods, who found the site a source of much better stone than could be obtained in the local quarries. They pried out great blocks from the corners and sides of the pyramid, cut them up, and carried them away. After a certain number of the casing stones of the pyramid had been removed it did not take long for the whole structure above that point to collapse, for the rubble walls and sand fill of the interior of the pyramid depended for their stability entirely on the preservation of the outer casing.⁴ The final result of the quarrying was that the pyramid became a heap of stone and sand, and when the large blocks of fine limestone were buried so deeply as to make it difficult to bring them to the surface the place was abandoned as a quarry. The débris had to be removed before we could

space separates it from the pyramid and where it is, moreover, interrupted by the mortuary temple.

¹ BULLETIN, Dec., 1924, part II, p. 37.

² See below, pp. 16 f.

³ The wall is 11 m. distant from the pyramid's base, except on the east side, where a greater

⁴ BULLETIN, Dec., 1924, part II, p. 34.

clear the paving, but in the process many objects of interest were discovered.

Chief among these were a number of pieces, some large and many small, from the decorated panels of the inclosure wall. This, like the pyramid casing, had been used as a quarry, for its wide slabs of limestone of the finest quality could be easily cut up into smaller blocks and carried off. Fortunately



FIG. 1. FRAGMENT OF RELIEF FROM THE INCLOSURE WALL

some were left, especially at the center of the west side of the pyramid. When the structure of the pyramid collapsed the debris naturally tended to fall down the sides rather than toward the corners and thus to bury the inclosure wall less completely at the angles.

The decoration of the inclosure wall has been described before.⁶ It consists of vertical panels carved in relief occurring at intervals of five meters on both the inside and the outside of the wall. Depicted on the bottom register of each panel is the Nile god

⁶ BULLETIN, Dec., 1924, part II, pp. 38-39.

Ha'py holding before him a table of offerings. Above this comes an extremely detailed rendering of the traditional palace façade in very low relief; then the Horus name of the king, 'Ankh-mesūt, combined either with his throne name, Kheper-ka-Rē', or his personal name, Se'n-Wosret. These three registers reach nearly to the spring of the rounded coping. Above them is perched the Horus falcon wearing the double crown of Upper and Lower Egypt carved in a high relief which becomes more pronounced as the coping recedes from the plane of the wall.

The decorative scheme begins in the middle of the west wall. The falcons on the panels face away from this point, and the middle pair are closer together than the five-meter interval which separates the others throughout the circuit of the inclosure. The first course is preserved at the central point, but most of the lowest register of the decorated panels has been lost by erosion. Among the fallen blocks, however, we found one on which occurred parts of the palace façade sections of the central pair of panels and, near by, the broken coping stone with the head of one of the falcons and a part of the crown of the neighboring one. A block containing part of a name panel (fig. 3) had also been left here by the quarrymen. Other fragments of the decorated panels were found in great numbers along the west wall. In one of these (fig. 2) the sculptor had finished his work of carving the panel, but the stonemason whose duty it was to dress the wall beside it had left his job uncompleted. Perhaps it was at the end of the day's work, and he was detailed to another section of the wall the next morning. In any case, the overseer failed to notice that the dressing was unfinished. A smaller fragment (fig. 1) suggests that an attempt may have been made at a later period to cut out a part of a panel, presumably for use as a model in the carving of large-scale hieroglyphs.

Many of the casing stones and of the blocks immediately behind them, the "backing stones," which had fallen from the pyramid, were removed in the course of our clearing of the paved court. On a number of the backing stones were found marks

made by the quarrymen or by the gangs engaged in the heavy work of transporting them from the quarries to the pyramid site.

The chief interest of these inscriptions lies in the fact that no less than sixteen are dated to years of the king's reign. Hitherto it has been supposed that the pyramid of

those years and that, therefore, the pyramid temple could not have been built in the ninth year.

A secondary interest, moreover, attaches to these inscriptions. The pyramid was built of two types of stone. The casing stones and the backing stones were quarried



FIG. 2. THE HORUS NAME OF THE KING FROM THE INCLOSURE WALL



FIG. 3. A NAME PANEL AND PART OF ITS SURMOUNTING FALCON

Se'n-Wosret I was completed by the ninth year of his reign, for a mortuary stela of an Assistant Treasurer named Mery⁶ dated to the ninth year states that he built the "eternal dwelling" of King Se'n-Wosret I. This stela inscription we now find must refer to another temple of his, for our quarry inscriptions are of the years eleven to thirteen, proving conclusively that the pyramid was in the course of construction during

⁶ Piehl, *Inscriptions*, vol. I, ii-iv; Breasted, *Ancient Records*, vol. I, p. 246.

at Tura, which is on the east bank of the Nile across the river from Lisht and some fifteen or twenty miles to the north. The fine white limestone from the Tura quarries was used for the casing of all the pyramids of the Memphite necropolis and is still in use for buildings in modern Cairo. In the interior of the pyramid, however, a more easily obtained stone was employed. This was quarried in the Western Desert, and evidently not far from the site of the pyramid. The local limestone is more yellowish

than that from the eastern bank and does not withstand the action of wind and moisture so well. It was substituted for the more costly Tura stone in the construction of the heavy diagonal and cross walls of the inner structure of the pyramid.

Several inscriptions on the blocks of local stone name the quarry in which they were cut, for example, "(Date). Brought from the quarry of the North Pyramid, second district of Heliopolis." It is quite evident that when Se'n-Wosret's predecessor, Amen-em-

the pyramid supplied with sufficient material to prevent any interruption of their labors was a problem of management. We can picture the king's architect planning the campaign and dividing his forces into three separate groups: quarrymen, transport department, and builders. Enough stone had to be quarried to keep the masons going at an even pace, and this was a fairly simple equation to maintain. Transportation, however, was a more complicated problem, for into it entered, in the case of



FIG. 4. OSTRAKON OF THE XIX DYNASTY

hēt I, began the construction of his pyramid his chief architect started a quarry in the vicinity and that Se'n-Wosret continued to obtain stone from the same place. Curiously enough, a quarry is still worked near Amen-em-hēt's pyramid, and that pyramid is commonly referred to, both by us and by the local inhabitants, as the North Pyramid.

The inscriptions on the finer limestone afford some evidence as to the manner in which it was brought over from the Eastern Desert. These notations were found only on the backing stones, for the blocks of the outer casing had to be dressed to exact size and shape after their delivery on the site. The transportation of these huge stones from Tura over so long a distance was chiefly a matter of man power. To keep the masons engaged in the actual building of

the stone from the east bank at least, the annual flooding of the valley of the Nile. The flood was, of course, a great boon, for it considerably reduced the distance over which the huge blocks of stone had to be dragged on sledges or rollers. But the flood lasted only four months or so, and when it receded there followed a period during which the banks were soft mud over which heavy weights could not be moved. These conditions made it necessary that water transport should be confined as much as possible to the time of high water, and in consequence the management of transport in general was more difficult. A great amount of the stone had to be ready on the east bank for the arrival of the flood. Then presumably most of those engaged in moving the blocks were concentrated on the task of

loading the barges, towing or sailing them up to Lisht, and unloading them there. They could probably not have taken the time to drag the stones up to the plateau immediately, but must have left a great accumulation of them on the landing stage until the falling of the Nile released the men from the barges. Part of the transport gang would then have been detailed to de-

—that is, from the quarry, across the river, and up to the pyramid. Many of the inscriptions were dated to the season and month, and we found that these dates were confined to seven successive months of the year. The Egyptian calendar year was slightly shorter than the solar year, so that the months gradually shifted, and their positions with reference to the real seasons



FIG. 5. THE WEST SIDE OF THE PYRAMID CLEARED

livering the stone at the pyramid and the rest to dragging the newly cut blocks down from the quarry to the docks on the east bank.

Our inscriptions are the marks put on the blocks by gang foremen who were responsible for the delivery of a certain amount of stone at a certain time at the dressing stations about the pyramid. A typical inscription reads: "Year 12, Month 1 of Shōmu, Day 12. Brought from the Rekhet landing stage."

When we began the study of the inscriptions in the field we supposed that they applied to the whole course of the transport

of the year varied in the different periods in history. In camp we did not happen to have any books on the calendar. We assumed that the seven months represented by the inscriptions were months of high water and we were surprised that water transport should have been possible over so large a part of the year. On checking up the matter we found that our assumption had been wrong and that the seven months were the driest of the whole year. Further study showed that the inscriptions related to carrying blocks from the west bank up to the pyramid site.

In further support of the theory is the

fact that of fifteen inscriptions on the Tura blocks four examples are dated to the month immediately following the flood and five to the month at the end of the dry season, while only six are scattered through the intervening five months. It seems likely that a greater number of blocks had to be transported from the river bank to the pyramid during these two months; in the first case, in order to make up a shortage of stone at the site due to the fact that the transport workers had for the most part been engaged on the barges and, in the second case, in anticipation of their being so employed.

While we are on the subject of inscriptions mention may be made of a pottery ostrakon found just outside the inclosure wall, near the center of the west side and low enough among the broken stone left by the quarrymen to show that it had been dropped there rather early in the period of the use of the pyramid site as a quarry. It had been broken under the feet of the men who were engaged in that work, and by no means all the pieces were recovered (fig. 4). From the nature of the hieratic writing it may be dated to the Nineteenth or Twentieth Dynasty, and we may be fairly sure that that was the period when the pyramid was despoiled of its casing, even though we may assume that the royal burial in the pyramid and the other burials in the surrounding cemetery were plundered at an earlier date. Hayes has discovered that the inscription on this ostrakon is part of a popular literary document which presumably originated in the twentieth century B.C. but which is known only from papyri and ostraka of the Nineteenth Dynasty (1350-1200 B.C.), when it was much used as a model for scribes' exercises. The work purports to be in part a relation by King Amen-em-hêt I of the Twelfth Dynasty to his son Se'n-Wosret of an attempt to assassinate Amen-em-hêt in his palace. Thus the ostrakon concerns the very kings whose mortuary temples have been excavated by our expedition, although it was actually inscribed more than six hundred years after their time. The text includes the speculations of the king regarding the conspiracy—whether it originated in the royal harim and

whether the simple folk of the town were in ignorance of it—and goes on to the beginning of what we know from other examples to be a rather lengthy statement of the wise and brave deeds of Amen-em-hêt, which he feels have not merited his assassination.

Our clearing of the west side of the inner court was finally completed, but as the work proceeded it seemed less and less likely that this court would prove to be the site of the tombs of the princesses. In places the paving slabs had been removed, exposing bed-rock which was perfectly normal in appearance. In one or two cases intact paving stones had a suspicious appearance, as though they might have been set in place separately and not in the regular course of laying the pavement of the court. These we removed only to find that the rougher foundation blocks were just what we should have expected had we not been suspicious.

As far as the pyramid was concerned, we found that at the center of the west side the casing was preserved to a height of eight courses (fig. 5). To north and south the preservation was less complete, until at the southwest corner only the first corner stone remained and at the northwest corner both the actual casing stones and the backing blocks had been removed.

At the northwest corner even the first layer of paving had disappeared, but the foundations below it showed where a deposit had been situated (fig. 7). Such a deposit had been found intact at the southeast corner of the pyramid in 1924.⁷ It had contained the head of an ox but nothing else to prove it the counterpart of the usual corner foundation deposits in Middle Kingdom pyramids. In the case of the North Pyramid (that of Amen-em-hêt I) the deposits had been found under the actual corners of the pyramid, whereas the one under discussion was in a hole in the pavement in the line of the diagonal of the pyramid and about a meter from the corner. At the time I had not been satisfied that this took the place of the regular corner foundation deposit and had tunneled under the foundations of the corner stone itself in order to make sure. The underground work in 1924 had not been carried out extensively

⁷ See BULLETIN, Dec., 1924, part II, p. 35.

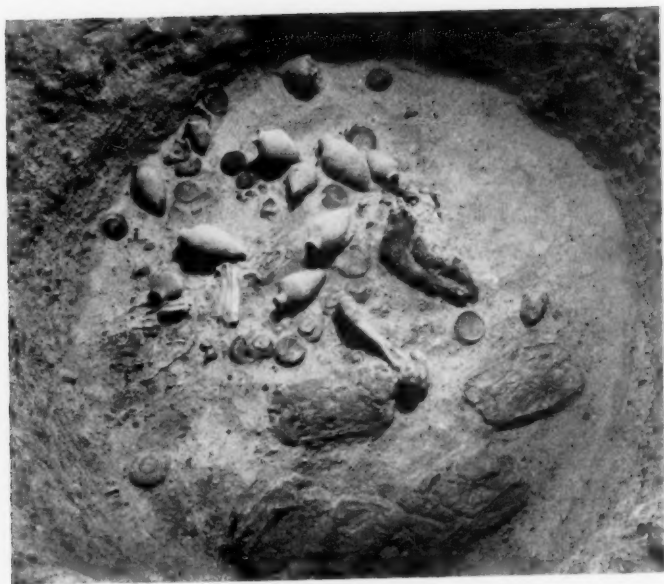


FIG. 6. CONTENTS OF ONE OF THE FOUNDATION DEPOSITS IN POSITION



FIG. 7. THE NORTHWEST CORNER OF THE PYRAMID. THE TWO STONES COVERING THE FOUNDATION DEPOSIT AND THE PAVEMENT DEPOSIT IN THE LEFT FOREGROUND

enough, however, as I discovered in this season's work.

At the northwest corner of the pyramid, as has been stated, both casing and backing stones had been removed; not only these, but also the upper course of the foundations under the corner proper. The removal of this course revealed what proved to be the bottom course of the foundations, which, we found, lay on bedrock. At the corner this course consisted of two huge flat stones lying side by side. If a true corner deposit existed it would be found under them.

The problem of breaking up these stones

ening of the point, but it would have been easily possible. The next step was to pack the two cuts with thin plates of iron and carefully to set steel wedges between the plates. After this, first calling on the Prophet, he seized his sledge and began to hammer in the wedges. They had sharp edges, to be sure, but these edges were not what was depended on to split the rock. It was, rather, the lateral pressure exerted on the iron plates and through them on the sides of the cuts. Copper or bronze wedges and plates would have been just as effective. After each blow on the wedges he would



FIG. 8. POTTERY FROM A FOUNDATION DEPOSIT

(they were too big to shift even with heavy jacks) was too much for the sledges of our workmen, so we called on the services of the local quarryman. He wanted to use dynamite but we could not allow that and therefore he set to work in the old-fashioned way. It was most instructive to watch his method of attacking the problem, for except that he was using steel and iron tools he was doing exactly what his ancestors—possibly of the Twelfth Dynasty—had done.

His first act was to examine the stone very carefully to find the line along which it would be most likely to split. Then he set to work with his quarryman's pick, making a deep narrow cut near one side of the block and another near the opposite side. To do this with a copper pick would have required a longer time and possibly repeated sharp-

bend down and listen closely to the stone. At a certain point, though how he made up his mind it was impossible to say, he leaped on the stone and gave it terrific blows along a line between the two wedges. Several more tremendous blows alternately on the two wedges, the block gave a clicking sound, and a clean split appeared in the expected place.

This process was repeated until the great stone was reduced to pieces small enough to be broken up with a sledge. Then we examined the ground on which the foundation stone had been set. Except for a thin layer of white sand it was solid bedrock. However, near the edge of the adjoining stone there was a depression full of sand. From the curve of its edge we were certain that it was the expected deposit hole, but too little

of it extended beyond the foundation stone for us to be able to clear it. It was necessary to remove the second stone also.

This accomplished and the sand which formed the packing of the foundations cleared away, the mouth of the deposit hole appeared: a circle two meters in diameter situated just below the place where the corner backing block had been set. It was filled with clean white sand, and this had to be removed to a depth of nearly two meters before the objects which formed the deposit began to emerge (fig. 6).

may assume from this that the custom of burying objects in holes in the ground during the ceremonies connected with the beginning of the erection of a building was firmly established in the Old Kingdom. Though innovations were introduced in later periods, the custom continued essentially the same. It endures to this day in the ceremonies at laying the corner stones of our public buildings.

After we had fixed the position of the deposit under the northwest corner we were able to reach those under the southwest



FIG. 9. FOUNDATION DEPOSIT: THE FIVE BRICKS WITH THEIR TABLETS EXPOSED AND THE OX-HEAD

They consisted of food offerings, pottery, and bricks containing plaques which represent the materials used in the construction of the pyramid and temple. Similar deposits have been found in the Eleventh Dynasty temple of Mentu-hotpe at Thebes⁸ and under a corner of the Twelfth Dynasty pyramid of Amen-em-hët I at Lisht.⁹ This deposit, therefore, follows the traditional type of the Middle Kingdom. That its origin is earlier may be deduced from the water pots (fig. 8),¹⁰ miniature examples of a shape common in the Old Kingdom but entirely out of fashion in the Twelfth Dynasty. We

and southeast corners without much trouble by tunneling through the comparatively soft bedrock under the foundations. They were practically identical as regards position, size, and contents, and by comparing the three we were able to add something to our knowledge of the nature of the rites which were performed in connection with them.

This ceremony is referred to in inscriptions as "the stretching of the cord," and in earliest times it doubtless took place when the site for a building was selected and its size and position were determined by means of four stakes and a long rope. As a matter of fact, in this case a great deal of preliminary work had already been done before the holes were dug at each of the

⁸ BULLETIN, Dec., 1922, part II, p. 28.

⁹ BULLETIN, Nov., 1921, part II, p. 16.

¹⁰ Most of them were not far from 20 cm. in height.

corners. In the first place, the site had been selected long enough ahead to permit the plateau to be leveled off around the site of the prospective monument, with a core of rock left as a nucleus for the pyramid. Then a trench four and a half meters wide and a meter deep had been dug in the rock to receive the foundations of the pyramid casing. Lastly the four circular holes, two meters wide and two meters deep, had been dug in the trench close against the core of rock.

It was only then that everything was in



FIG. 10. TABLETS BEARING THE NAME OF THE PYRAMID

readiness for the ceremony.¹¹ What functionaries of the court attended it we cannot be sure, but presumably the king was sufficiently interested in his "eternal dwelling" to be present and make sure that the performance was properly done. We may be certain that the priesthood was represented, for the ceremony was a religious one, and the actual rites must have been carried out by a specially appointed priest.

All the objects were undoubtedly at hand in the care of lesser members of the priesthood, and at the proper moments during the recitation of the prescribed spells the priest or his assistant would drop the meat offerings, the pottery, and the bricks into the hole. That this was the order we were able to determine from the overlapping of

¹¹ Probably the king's burial chamber below the surface of the rock had also been constructed by this time.

the different classes of objects in the bottoms of the holes.¹² That they were not laid in reverently but were dropped from the full two meters' height was quite evident from the way individual pots had broken and their fragments scattered and also from the condition of the bricks.

These bricks were the most interesting of the three classes of objects in the deposits. In each case they lay along the south edge of the hole. They had not been prepared long beforehand, for they were so soft that when they hit the bottom of the hole they flattened out like pancakes and barely showed that they had once been bricks. It is even probable that the molding of the bricks was part of the ceremony itself. One can imagine the priest squatting near the edge of the hole with the brick mold on a board in front of him. Beside him is a man with a basket full of wet mud, and an assistant has the set of plaques ready to hand to him. The mold is half filled with the mud; the alabaster plaque is laid in the middle; enough mud is put on top of it to fill the mold; the priest extends it over the hole and, with such words as "May the stone of this pyramid endure forever," pulls the board from under the mold. Flop goes the brick in the bottom of the hole and the priest starts in on the next tablet (cf. fig. 9).¹³

There were five bricks in each of the deposits. They contain plaques made of a greater variety of materials than have hitherto been found in deposits of the Middle Kingdom. The sets are identical: wood, faience, alabaster, and two metal plaques. Of the last mentioned, one is always larger than the other. When taken out of their bricks both of the metal plaques were covered with the thick green incrustation which denotes the presence of copper. We had supposed that one was copper and that the other might be bronze. A preliminary quantitative analysis, however, shows that the larger tablet is pure copper and that the

¹² The fact that the meats were put in first may mean that the earliest foundation deposits consisted solely of food offerings as propitiation to the gods.

¹³ It is worth noting that in all but one case (where the fact could not be checked) the bricks lay with the inscribed side of the tablet uppermost.

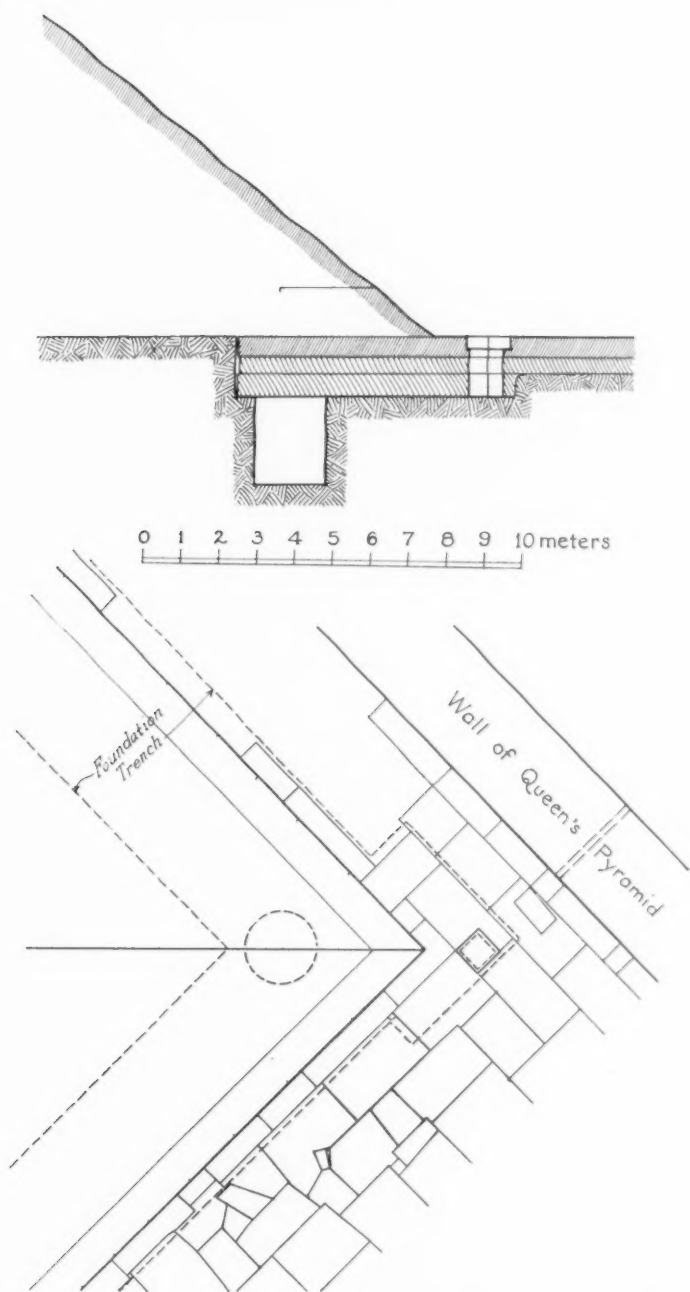


FIG. 11. PLAN AND SECTION OF THE SOUTHEAST CORNER OF THE PYRAMID
SHOWING THE TWO DEPOSITS AND THE FOUNDATION TRENCH

smaller one is an alloy of three metals in the following proportions: silver 54 per cent, copper 28 per cent, and gold 18 per cent. There is little doubt that this is a sample of the silver alloy which was used in the decoration of the temple. The wooden tablets had almost completely decayed, and it was possible to record the inscriptions only from the impressions left in the mud of the bricks.

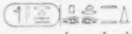
As was the case in the foundation deposit at the North Pyramid, the tablets are inscribed with the name of the pyramid. The inscriptions, except on the faience plaques, are practically identical:  "Se'n-Wosret, surveying the two lands."



FIG. 12. TWO OF THE JARS

This name has not hitherto been known, and another name, "Chenmet-sût," has been considered, with reason, to apply to the pyramid. It is uncertain whether the whole group of characters including the king's name should be considered as the name of the pyramid, for the occurrence of the pyramid determinative after the phrase "surveying the two lands" makes it seem possible that it alone was regarded as the name. This supposition is strengthened by an oddity in the inscriptions on the faience plaques. One of the three is a plain glazed tile with the inscription engraved in its surface after it was fired. In each of the other two the inscription is the same, but all the characters were not put on at one time. The cartouche and a final word, "beloved," not found on the plaques made of the other materials, were molded in the tablet before it was fired, the intervening space being left blank. At some subsequent time the words "surveying the two lands" with the pyramid determinative were engraved crudely, as may be seen in figure 10, between the

other two groups. These facts make a puzzle which is hard to solve. Perhaps the name of the pyramid was not determined until the last moment, so that the maker of the faience tablets was unable to include it with the rest of the inscription in his mold. If we accept this theory, we may suppose that the third faience tablet was broken while it was being engraved and that another tile was substituted. In any case, the name does not seem to have stuck to the pyramid, for the seals from offerings brought to the temple, which we found with the discarded pottery containers near its entrance, do not include a single example of this name among the many impressions of the official seal of the pyramid, which all read "Chenmet-sût."

In figure 11 the plan of the southeast corner of the pyramid is given, together with a section along the diagonal of the pyramid, in order to show the relative position of the foundation deposit and of the secondary deposit in the pavement. The main deposit, under the heavy blocks which supported the pyramid casing at its corner, was placed there before these foundation blocks were set. Indeed, some considerable time may have elapsed between the performance of the ceremony and the placing of the blocks in the foundation trench, for the uppermost layer of sand in the deposit hole was yellow drift sand and not the clean white sand which had been piled in on the objects placed at the bottom of the hole. After the completion of the pyramid, the temple and the inclosure walls were built, and the paving of the court was laid. When this was accomplished the tomb of the king was all ready for his demise. The dedication may have taken place at once or may have been postponed till the time of his death. It may be presumed, however, that some ceremony was performed to celebrate the completion of the building, and it was doubtless in connection with this that the deposits in the pavement adjacent to the four corners of the pyramid were made.

There was another type of deposit which was probably not made until the time of the royal funeral. One of this kind, consisting of a wooden sledge, was found in 1918,¹⁴ in a

¹⁴ BULLETIN, July, 1920, part II, p. 10.

specially dug hole in the outer court near the south limestone inclosure wall, and other deposit holes which had, however, been plundered came to light in a row run-

yond the wall. As we expected, a hole roughly two meters square was found under the floor of the outer court near the corner. We cleared it with high hopes, for since it

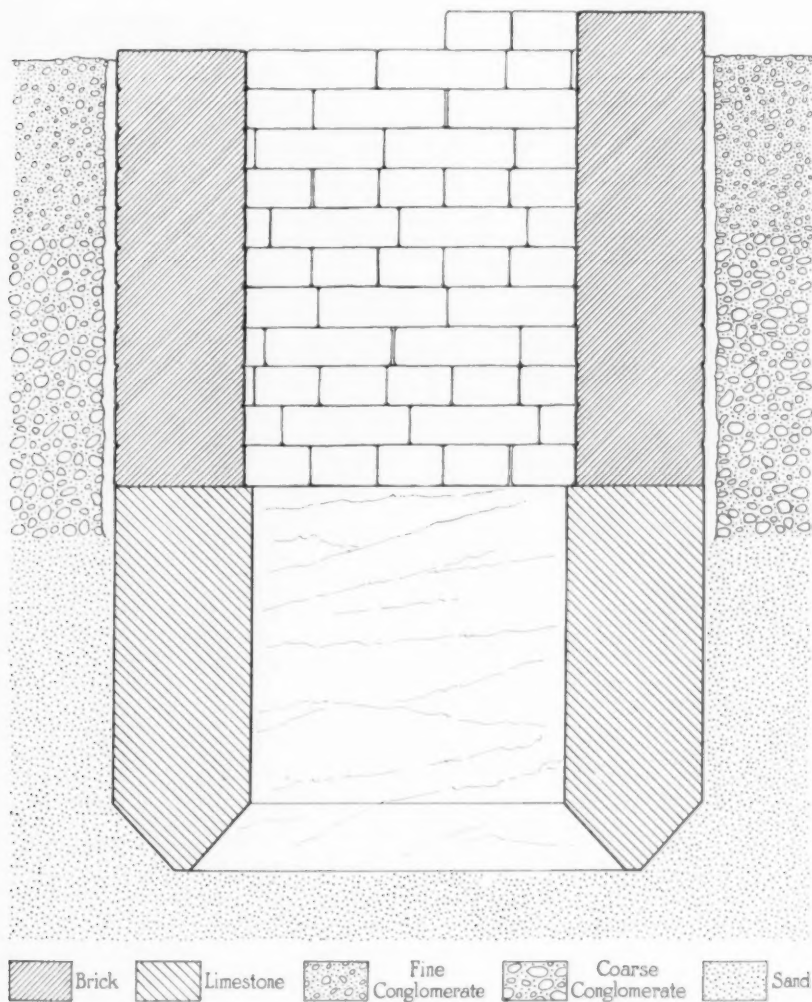


FIG. 13. DIAGRAMMATIC SKETCH OF THE STONE CAISSON IN USE

ning east and west some three meters south of this wall.¹⁵

On the assumption that this row of deposits extended as far as the western corner of the wall, the clearing on the west side of the pyramid was extended southward be-

¹⁵ BULLETIN, Dec., 1924, part II, p. 36.

was not a regular foundation deposit we had no notion of what it might contain. We were somewhat disappointed when we came upon fragments of large water jars. No less than twenty-two, their mouths sealed with mud, had been brought up in slings on poles and let down into the hole. Their own

weight and that of the fill above them had crushed them, and the wooden poles and the rope slings had rotted away. We were able to put together four of the jars (two of which are shown in fig. 12), and to add one more item to our knowledge of the royal burial customs of the Twelfth Dynasty.

While the heavy clearing of the inner court on the west side of the pyramid was going on, smaller gangs of men were at work clearing the outer court on that side. At one point toward the northwest corner of this court we had found in 1924¹⁶ a tomb in the form of a brick vault sunk just below the surface of the ground, and we had supposed



FIG. 14. LIMESTONE LAMP

that the absence of pits in the area we had cleared was due to the peculiar nature of the ground. The upper strata consist of firmly packed red sand overlying a coarse conglomerate. Below this in the rest of the site lies soft limestone which is a very good medium for the cutting of tomb chambers. In the area in question, however, there exists a deep pocket of coarse white sand having scarcely any cohesive quality. It is impossible to dig an open pit here without sand running in from all sides, undermining the hard upper stratum and causing its eventual collapse.

Although we failed at first to find any pits, it is fortunate that we did not give up clearing this part of the court. Had we done so we might have missed what was, from the archaeological point of view at least, quite the most interesting discovery of the season. In the course of our clearing we came upon a

¹⁶ BULLETIN, Dec., 1924, part II, p. 37.

depression in the court which extended through the upper stratum into the sand level. The fill was not clean, and we continued to remove it until we came upon brick walls forming an irregular rectangle. By building a rough wall on this we succeeded in blocking the flow of the sand and were able to clear the space between the walls. As we went down they became more regular and showed themselves to be the typical brick lining of the mouth of a pit; but they extended to an unprecedented depth, and we could not make out how it had been possible to build them up through a layer of nearly seven meters of loose sand. The explanation came when we got to the bottom of the walls. We found that they had been built from the top down instead of from the bottom up, incredible as this may seem.

There must have been a master mind among the engineers engaged in the building of the pyramid. A problem was solved then by an invention which is still in use and which has made possible many of the huge erections of the present day—the caisson. Of course the principle may have been used before this period, but this application of it, so far as we know, is the earliest yet discovered.

The old Egyptians set about their task somewhat in the following manner. Having determined the place and the size of the pit, they cut through the hard upper stratum to the sand level, making the cutting sufficiently large to allow for a brick lining to the pit. A block of limestone was then cut to the same dimensions as the pit and to an appropriate height. This was pierced with a vertical hole and hollowed out to the size which the intended shaft would have after the brick lining was laid up. The hollow block was then lowered into the pit until it rested on the sand. On the rim of the caisson was built a brick wall of the same thickness as its top surface, with smooth faces both on the inner and on the outer side, the latter being, practically speaking, against the cut in the rock. When this wall had been constructed to the level of the ground, or perhaps a little higher, the digging of the pit was recommenced. As each basketful of sand was removed, the stone caisson, and with

it the brick wall which rested on it, settled slightly. The sand had to be removed with care from under all four sides equally, in order to prevent the stone from tilting. Gradually the stone sank through the sand, and as it sank courses of brickwork were added to the wall above (fig. 13). Eventu-

impossible now to know. The bottom side of the stone had been beveled nearly to an edge, a refinement which indicates that difficulty had been encountered in causing a flat-bottomed caisson stone to sink through the sand. In an earlier attempt the pressure of the sand must have pushed in the brick

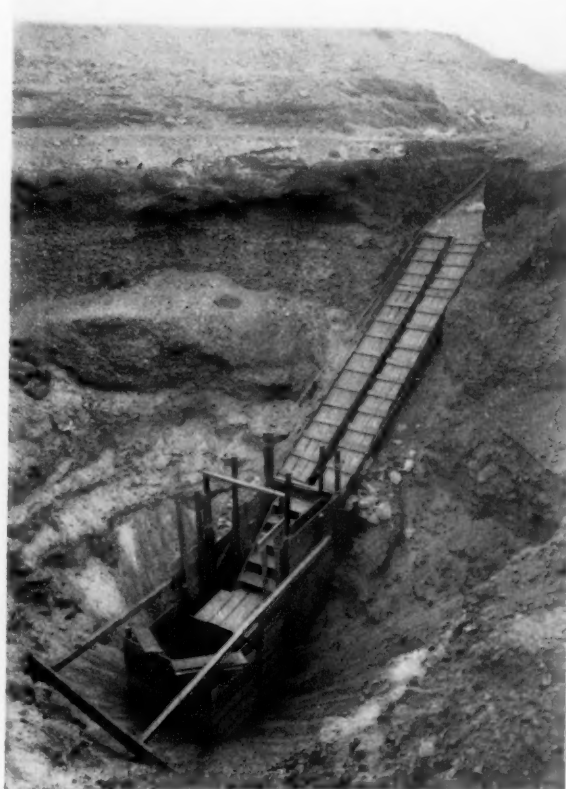


FIG. 15. THE GREAT CRATER PIT WITH OUR
WOODEN CAISSON IN POSITION

ally the hollow block rested on the limestone which formed the bedrock below the sand stratum, and the brick walls extended from it to the surface of the ground. From this point on all was plain sailing. The pit was cut on down through the limestone with the same length and breadth as the hole in the caisson stone until the desired depth had been reached.

What previous experience and experimentation had been necessary before this feat was accomplished so successfully it is

walls, for that possibility had been guarded against in the caisson under discussion. Traces were left of a rectangular socket at each of the four corners of the caisson stone, the upper part of the hole through the stone having been left roughly circular instead of square, as it was below, in order to allow for these sockets. Into them beams of wood must have been set, extending upward and forming the support for planking, against which the walls were built and which helped to resist the pressure of the sand. At this pe-

ried the Egyptians had long known the principle of the arch and might have employed it here to resist this pressure by making the upper part of the pit circular; but presumably this would have been too radical a departure from the age-old custom of the rectangular burial shaft. It seems strange too that the builders did not think of causing the brickwork to collapse after the burial had been completed. All their efforts were bent toward making the tomb safe from plunderers, and here were ideal

of limestone on which the stone rested was of a soft shaly consistency, and the pressure of the edge of the caisson on it resulted in its breaking away at some later period. The sand rushed in to such an extent when we got to this level that we had to stop working. We took a leaf from the Egyptians' book by making a caisson of wood, slipping it through the hole in the caisson stone, and driving it down below the level of the stone. When we found by sounding through the sand that the rock in all directions was in-

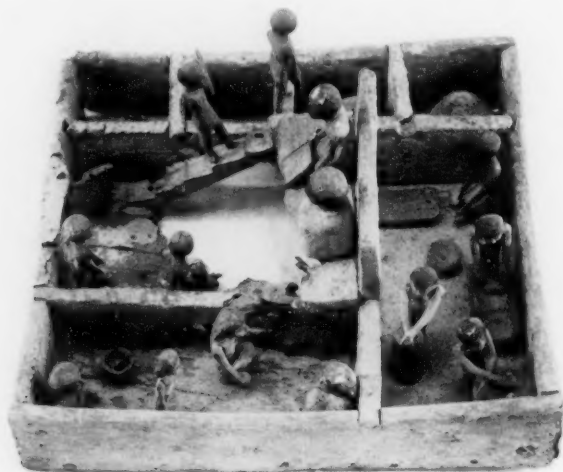


FIG. 16. MODEL GRANARY, BAKERY, AND BREWERY

circumstances for accomplishing that end. The only thing necessary would have been to employ some device to break in the bottom of the wall next the stone. The brickwork would then have fallen down into the pit, the sand would have followed, and the whole lower part of the tomb would have been submerged in a sea of sand impossible to reach except by a similar caisson. But this was not done, and in consequence plunderers succeeded in getting into the tomb. One side of the brickwork did collapse, either before the plunderers opened the tomb or during their operations. It was their rebuilding of the upper part of the walls that had made them irregular.

The beveling of the bottom of the caisson stone caused us difficulties. The first layer

tact we drove sharp-edged boards horizontally into the soft limestone and stopped the flow in this way.

We were prepared, of course, to find the tomb plundered, and so it was no disappointment, when we finally got to the bottom, to see that practically nothing was left. A pair of bead anklets overlooked by the plunderers was our only reward—except for a new realization of the inventive genius and the persistence of the ancient Egyptian.

This tomb had been plundered and so, alas, had one similarly dug and of larger proportions. In the latter case the brick walls were intact at the upper end of the pit near the surface but had been crushed in at the lower end, although the mass of mud

held together fairly well. At a certain depth, however, digging became dangerous, and we had to resort again to a wooden caisson. We fully expected to find another stone caisson at the bottom of the brick walls and were somewhat nonplussed to find them resting, albeit irregularly, on the rock-cut part of

to a third, but it sloped downward, and the floor of the third chamber was under water. Since the tomb had been plundered, our only find was a limestone lamp (fig. 14), discovered in a large chamber opening off the opposite side of the burial shaft.

We are hoping that a low Nile during the



FIG. 17. MODEL HOUSE AND BOATS AS FOUND IN THE COURTYARD OF THE MASTABAH OF THŪTY

the shaft. Traces of decayed wood gave away the secret. The caisson had been made of wood and had rotted away in the damp ground. The pit went on down to a depth of nearly twenty meters, ending in a passage opening eastward very near the level of the subsoil water. The rock here had been subjected to the action of moisture for so long that much of it had fallen in and this made the clearing difficult. The passage gave access to two small chambers and continued

coming season may enable us to explore this tomb further, for there is good reason to suppose that it is the tomb in which the princesses were buried. The clearing of the surface at this point brought to light the remains of a small pyramid east of the mouth of the shaft, that is to say, over the point toward which the passage was directed. Further east are traces of a similar pyramid which has not yet been completely cleared. It is likely that the plan is similar to that of

the pyramid inclosure at el Lāhūn, where a row of *maṣtabahs* north of the pyramid is fairly certainly the site of the tombs of the royal daughters.

Another small pyramid, lying west of the king's pyramid in the outer court, engaged



FIG. 18. HEAD OF A CALF
MODELED IN CLAY



FIG. 19. COPPER EWER AND BASIN
OF THE OLD KINGDOM

our attention for a considerable part of the season. Its pit had been dug with the aid of a stone caisson, but the walls had not been preserved to any great height in the sand level. In continued attempts at plundering, so much sand had been removed that the hard upper strata had collapsed and made a sort of crater. After weeks of labor and the use of a quantity of wood to shore up the shifting sand (fig. 15) we succeeded in reach-

ing the bedrock, only to find that one passage had fallen in and that the rock above a lower passage was so dangerously near doing the same thing that we were forced to abandon it.

The coming season will see us using our own caisson to dig a new pit and passage to the chambers under the pyramid and will prove to us whether or not the ancient plunderers were defeated as we, so far, have been.

In spite of the great interest of these three pits the results in the form of tangible antiquities were negligible. We had some compensation for our disappointment here in a find made in an area where we had no expectations at all. After we had found the water jars¹⁷ it seemed advisable to clear the rest of the area which we had determined to be the site of such funerary deposits. To do this it was necessary to lay down a new railway line in order to get rid of the debris. In trenching what looked like bare desert suitable for a dump we came on brick walls which, as we extended the clearing, turned out to be the inclosures of several brick *maṣtabahs*.

One of these *maṣtabahs* had been rather elaborate, with a porch in its east façade. The inner walls of the porch had been lined with limestone decorated with relief, and the roof had been supported by four fluted columns. Only the bases of these remained, however, and nothing but fragments of the relief from the porch and from the offering chamber behind it. The pit and burial chamber, too, had been thoroughly looted, but we were able to recover the owner's name, Thūty, and several of his titles from fragments of his stela.

In clearing the passage formed by the wall which inclosed this *maṣtabah* we came across one of the surprises of the season, for set in a hollow in the floor of this narrow court were three of the wooden models which were so much in favor in the Middle Kingdom (fig. 17).

One is a domestic model with three rooms and four grain bins. In the first room the grain is brought in and registered by a scribe, the bearers walking up a staircase to dump their loads into the bins. In another

¹⁷ See above, pp. 15 f.

the baking of bread is in progress and in the third the brewing of beer. The model represents all that happens to grain from the time it is threshed to the time the finished product is ready to be consumed (fig. 16).

The other two models are boats. In one the rowers are at work, although when found the oars were neatly fastened to the gunwale by means of the loops which formed the rowlocks. The second is a sailing vessel with mast and spars set, but the sail

they were a part of the funerary paraphernalia of the official Thūty. The sand caked on the scroll was carefully cleaned off and we read: "Ho! Osiris so-and-so." Although the boat was quite good enough in quality to have been made to order, it was really a stock model, and the maker had put in the word "so-and-so" instead of leaving blank the place where the name of the owner should have been written.

Another small dig was carried on this sea-



FIG. 20. OFFERING TABLE AND STELA IN THE FORECOURT OF AN OLD KINGDOM TOMB

has of course rotted away. In this boat is a representation of the deceased as a mummy on a bier, mourned by two women representing the goddesses Isis and Nephthys. In the hands of a priest standing beside the bier is a roll of papyrus with some hieroglyphic characters on it. We hoped that it might give the name of the deceased and thus settle whether the boat belonged to the mastabah or not. Such models are usually found in tombs, and we had at first thought that these must have been thrown out by the plunderers. But as they were undamaged, except by being buried in this fashion so close beneath the modern surface of the ground, and had evidently been deposited with considerable care, it seemed likely that

son in a place where earlier work had brought to light some interesting clay sealings. This was a hollow north of the main entrance to the pyramid temple. It had been used as a rubbish pit by the priests and was filled with masses of broken pottery, bones of animals, fragments of wood, and other refuse. In this trash were found many clay sealings which had been attached to pots, boxes, and so forth, and some of these bore the impressions of scarabs and other seals. Among the impressions occurred many bearing the name of the pyramid, Chenmet-sūt, that of Se'n-Wosret, and that of his queen, Nefru. Others were impressions of seals of Se'n-Wosret II, and two bore the name of Sebk-hotpe III, which is

fair evidence that the temple continued in use through the Thirteenth Dynasty. There were also many with the names of officials.

However, the most valuable object found here was not the impression of a scarab but the head of a calf modeled in clay (fig. 18). One is inclined to think of the Egyptian sculptor as a man who worked with chisel and mallet alone, cutting his statues from a block of stone or wood. There are, of course, figures in faience, shawabtis, the heads of terracotta canopic jars, which were modeled in plastic materials; but stone statues seem preëminently to symbolize Egyptian sculpture. It is not often that one sees a sketch done just for fun—rarely in drawing and still more rarely in the round. Here, however, is a case in which a Twelfth Dynasty Egyptian was merely amusing himself with a lump of mud, modeling the head of a calf. It served no useful purpose, neither the glorification of a king nor the assurance of a man's happiness in the after world. The man who made it perhaps had the job of sealing up the offerings brought to the temple and may thus have had the wet clay always to hand. But he was a finished sculptor, with assurance at his finger tips. This product of an artist's idle moment, preserved by a most unlikely chance, gives us an inkling of the naturalistic sculpture which might have been produced in Egypt had convention and tradition not bound the professional artist to his task of serving religion.

When our camp was first opened at Lisht many repairs were necessary after the six years during which it had remained unoccupied. The workmen's huts, especially, had suffered, and instead of rebuilding all of them we quartered some of our men in a row of tombs cut into the low cliff south of the North Pyramid. From the beginning of the Expedition in 1906 we had considered investigating these rock-cut tombs, though there never was any expectation of finding anything, since they had always lain open. In clearing one of them out for occupancy we discovered some Roman burials, and it seemed advisable to make a more thorough search. There were four pits in the floor of

this tomb, and at the bottom of one of them near the doorway leading into the burial chamber there lay a circular alabaster table and a copper basin with a ewer in it (fig. 19).

We had always supposed these tombs to be of the Twelfth Dynasty like the rest of the Lisht cemetery, but there was no possibility of doubt that these objects dated from the Old Kingdom. The size of the burial chambers, nearly square and too small to receive a Middle Kingdom coffin, made an Old Kingdom dating certain, though just what dynasty the tombs belong to remains to be determined. Others were cleared, but none of their pits produced anything from the date of their original occupancy. In the forecourt of one, however, we found a fine limestone offering table set at the base of a stela (fig. 20). The latter had been completely eroded by the action of salt, but the offering table is in fairly good condition and is a fine example of this type of altar with its complicated compartments and channels.

The excavations were confined to the site at Lisht, but before they commenced, early in December, all the members of the Expedition spent a month at Thebes working on material in the storerooms. During most of the winter Walter Hauser was engaged on the Ctesiphon Expedition in 'Irâq, but he returned in the spring to Thebes. The writer was assisted in the excavations at Lisht by Dr. William C. Hayes, Jr., and Dr. Henry A. Carey, the latter being in Egypt for the first time. Harry Burton helped with the photography at the end of the season, having spent the winter at Thebes recording tomb paintings there and assisting Howard Carter in completing the photography of the objects from the tomb of King Tut-'ankh-Amūn. The Graphic Branch of the Expedition under Norman de Garis Davies continued its work in the Theban tombs and at Beni Hasan. In addition to copying Theban tomb paintings Charles K. Wilkinson spent a part of his time on the temple of Deir el Bahri.

AMBROSE LANSING.

THE WORK OF THE GRAPHIC BRANCH OF THE EXPEDITION

IN the season of 1931-1932 there was a departure from the usual course of events, two months of it being spent by my wife and me in a rock shelter at Beni Hasan, which lies two hundred and fifty miles north of Thebes and is the site of well-known decorated cliff tombs of the Middle Kingdom (2000-1788 B.C.). The primary aim of this excursion was that Mrs. Davies might secure a copy of a large fowling scene which taken as a whole is a fine example of Middle Kingdom painting and as regards certain details is of quite superlative merit and attractiveness. The excerpt on the cover,¹ even though deprived of the charming coloring, will bear out this praise. Apart from the difference of epoch and style, the picture has the advantage over most Theban paintings that, lying near the ceiling of a lofty tomb and veiled by a cloud of something like mildew, it has almost escaped injury.

Our visit to the site also enabled me to make a fairly complete survey, with copious notes on detail and color, of the whole group of tombs, the records of which constitute our main source of knowledge of the social life of the people at that important period. The curious natural film which has stolen over the greater part of the walls makes the perusal of the records a tedious and lengthy process and the acquisition of facsimiles still more difficult. But these adverse conditions have ensured security from theft in the past and form a guarantee for the future. It was a great comfort to be able to disprove the statement, printed recently by a scholar, that the tombs had suffered greatly in the last half century and were in danger of further deterioration.

The two largest tombs present models which the smaller ones repeat with considerable demerit, both as presentations of the subject and in artistic value. The art reflects

¹ This and the other halftone illustrations are taken from our paintings.

the political character of a time when the various districts of Egypt had achieved a large measure of independence and acknowledged the rule of local chieftains rather than direct administration by the king. The art of Beni Hasan is provincial therefore, admitting novelties without being able to master the difficulties which had prevented their acceptance by those who were more closely in line with the best traditions of the past. But it makes amends by remaining closer to life and nature, by giving freer admission to representations of all sides of social activity, and by entering into a wealth of detail which the prevalent use of the chisel instead of the brush had denied to most of the older artists of repute. Besides the reigning stiffness, a certain clownishness is apparent which frequently degenerates into travesties of the human body and sometimes even of animal form, though the interaction of the figures is often vigorous enough and attracts by its naive quaintness. At their best the scenes of animal life are admirable, and the hieroglyphs, which reflect items of the scenes in miniature, are models of deft draftsmanship. The bright coloring, the varied palette, the precise lines, and the wealth of minute detail must have made these imposing halls a remarkable spectacle before time drew a veil over their brilliance.

The well-known picture of an enforced (?) visit to Egypt by a caravan of nomads from the Red Sea littoral, clad in robes of alien gayety of color, exhibits the local art at one of its highest points (fig. 4). The white pearl or bead that adorns the tip of the pointed Arab beard is a feature for which I cannot quote a parallel.

Figure 3 is also familiar, but, owing to the dimness of the scene, earlier copies have shown variants of detail or lack of clearness. It presents one of the fullest and most reliable of those scenes of manufacture for which

this group of tombs is renowned. These depictions are often rough, and so simplified as not always to be a convincing guide to the procedure adopted. But here the action of weaver and spinner is really instructive as to the methods in use. In making the fat

Nothing more fishy can well be imagined. The delicate silvery blue of the back, merging into the pinkish white belly, and the evanescent greenish red of the gills can still be detected. It is notable in this case that the water, instead of being the ficti-

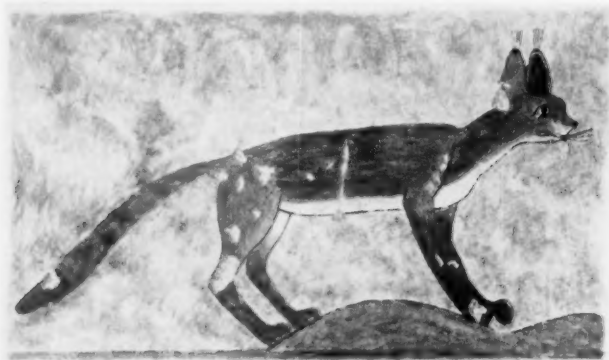


FIG. 1. WILD CAT. FROM TOMB NO. 3 AT BENI HASAN

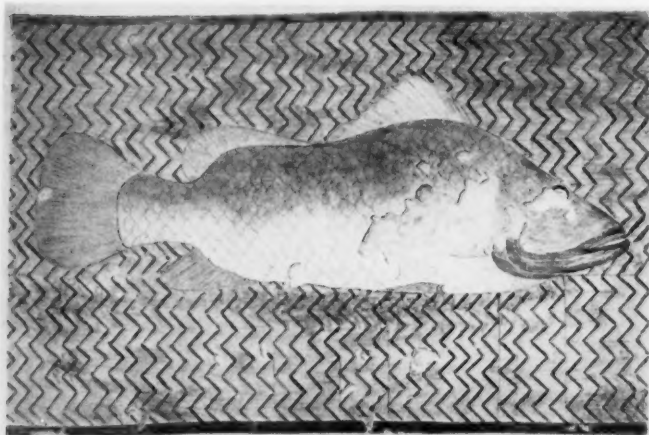


FIG. 2. FISH. FROM TOMB NO. 3 AT BENI HASAN

"overseer of weavers" typical of social success the artist has approached caricature.

Bird life is unusually well rendered. Though the group on the cover is exceptionally charming, almost every presentation of the various species, whether wild or domesticated, is admirably drawn and colored. Figure 2 will show that the fish, when they occur, are not less vividly rendered.

tious blue of convention, is given a deep yellow tone which consorts better with the turbid depths of the Nile.

The wild animals are less carefully rendered, except where they have been seen at close quarters as living captives or domesticated breeds (cf. fig. 4). The wild cat or caracal shown in figure 1 may be taken as representative of the wild animals of Beni



FIG. 3. WOMEN WEAVING AND SPINNING. FROM TOMB NO. 3 AT BENI HASAN



FIG. 4. EASTERN BEDAWĪN BRINGING TRIBUTE. FROM TOMB NO. 3 AT BENI HASAN

Hasan when shown in their desert haunts. The artist has not been able to achieve much grace of action. It is a stuffed specimen, badly set up. The pigs shown in figure 6 occur in a very rough and defaced scene, but as they are rarely seen so early, the picture is of value. The animal differs greatly from our idea of a pig. Its snout is sharp, its legs long, its body lean, its ears pricked. But in all this it resembles wild varieties and even the repulsive creature that scavenges in the streets of a modern Coptic village. In Egypt of the Middle Kingdom it

though the markings much more nearly recall the ears of a hare or even leaves. This monster is matched in a parallel case (fig. 8) by a creature with the body and tail of a lion, the legs of a dog, a bird's head, and two manifest wings—thus resembling the composite animal known as a griffin. This is followed by a beast which differs from it only in the absence of the wings and the replacement of the bird's head and neck by those of a snake. The griffin is preceded by a doglike animal whose stiff, arrow-like tail and square-tipped ears reveal it to be the



FIG. 5. GRIFFIN. FROM TOMB NO. 17 AT BENI HASAN

was probably only partially domesticated, and, as we do not see it being run down or captured in hunting scenes, there may have been already a mild taboo on it as food.

The desert scenes in these tombs show an interesting and unique feature. Mingling with the usual fauna are strange creatures such as no man ever captured or killed, though every village possessed inhabitants who had seen them at dusk or in the distance, and all knew their names and could perhaps discourse on their supernatural origin and powers. In a hunting scene in Tomb 3 a cat of some sort (fig. 7) is followed by a jerboa (desert mouse) and then by an animal closely resembling the first, save that in place of the feline head it has one more tortoise-like, without ears and with the facial markings of a hawk. Stranger still, out of its back springs a human head between what may be meant for wings,

unnatural creature in which the great god Seth was incorporate. The series of non-descript animals is closed by one which mediates between fact and fiction. It is labeled "elephant," but the single horn protruding from its nose brings it nearer to the rhinoceros. At a time when the knowledge of both animals could come only from second-hand reports of visitants to the far south, their characteristics could easily be confused. As neither could live in an Egyptian desert, it is plain that this has been extended to comprise all wastes, known or unknown, and their fauna, whether familiar or accredited.

A people not only prone but eager to listen credulously to travelers' tales, and possessing many linked enormities in mythology and tribal tradition, would be encouraged to a stronger belief in the reality of such curiosities by its faith in the power of men and gods to assume various



FIG. 6. PIGS, FROM TOMB NO. 17 AT BENI HASAN



FIG. 7. ANIMALS, TRUE AND STRANGE. FROM TOMB NO. 3 AT BENI HASAN



FIG. 8. FABULOUS ANIMALS FROM TOMB NO. 15 AT BENI HASAN

forms and by the tendency of its artists to devise symbolical combinations. If two gods may become fused in one, why not also the animals, however diverse, in which they are pleased to dwell? Observed fact too may sometimes have been the starting point for welcome self-mystification. There is, for instance, a horrible bird of prey which, fastening its talons in the fleece on the back of



FIG. 9. STARVELING HERDSMAN
FROM TOMB NO. 15 AT BENI HASAN

a sheep, tears out the animal's entrails. More familiar to us are the friendly birds that some animals suffer to alight on them and remove annoying parasites. It is easy to see how a hybrid creature, part bird, part beast, might be imagined by a superstitious hunter who in the lonely distance sees wings flapping on the back of a familiar animal in an inexplicable way.

In Tomb 17, the artist of which is prone to insert playful incidents and to use rebus writing in texts, the owner appears with a pet dog of one of the curious breeds often seen on the walls of these tombs. In this case

it shows its mixed strain in an absurdly bipartite way. But the gentleman has been given as another companion a little female griffin with doglike body, hawk's head, and, as tail, the stem and flower of a lotus (fig. 5). The creature is fantastically colored as if it had folded wings, and a collar with a lead is round its neck. It seems clearly intended as a pet of the owner, and above it is written "Her name is Saget."² It would not be impossible to see in this creature a bitch which, by means of a mask and coat, has been made to play the part of a composite animal. It is much more likely, however, that the artist has composed a jest, insisting that if the owner and his wife like to have about them queer mongrel dogs, apes, dwarfs with club feet, etc., they ought to be enraptured with a cross between an animal, a bird, and a flower. For the tail we may compare that of the animal skin forming part of the fetish of the god Imy-ut (identified with Anubis), which often ends in a lotus flower in the same way,³ or the tufted tail of the animal of Seth, which the artist transforms into a feathered arrow. There are two similar instances close by in which we seem to have to do with an artist who was inclined to a frivolous treatment of sacred or serious things. But, jest or no jest, it is plain how variable and hazy the demarcation between fact and fiction, the ordinary and the extraordinary world, was to an ancient Egyptian or indeed to any people in that stage of culture.

The last two pictures (figs. 9, 10) give evidence of the quiet humor which is found so often in Egyptian paintings. We cannot in all cases say that it was intended, but this matters less than might be thought. Barrie's rustic claimed that it was not a fair demand that the same person should both make a joke and see it; certainly humor is a very subjective thing and the humorous situation does not always find appreciation. We laugh more easily at others' mishaps, for therein lies humor's medicinal property. When once a man realizes that the contra-

² This is generally taken to be the common designation of the animal, but it would be more in line with precedent if it were the pet name given to this particular specimen.

³ See BULLETIN, Feb., 1915, supplement, p. 20, fig. 18.

dictions of his lot are shared by others, they become in proportion a universal feature and a law of life. Ceasing to be individual punishments or injustices, they belong to the order of things—have at least to be met. The perception of the risible is perhaps a special possession of the poor and tried, for it is the best medicament they find for life's ills and contretemps.

In figure 9 we have the case of the herdsman who grows thin while his charge gets

gry that he "feels the wrinkles i' his wame."

In figure 10 a boy of the fields has usurped the place of a young calf, to its surprise and discomfiture. The dispossessed son has all his mother's sympathy, but the docile beast forgets her strength in hereditary acknowledgment of the primacy of man, however young and small. She seems to be giving her impatient calf its first lesson in the hard mystery of social privilege ("after your betters"), such as no doubt, in his sphere again,

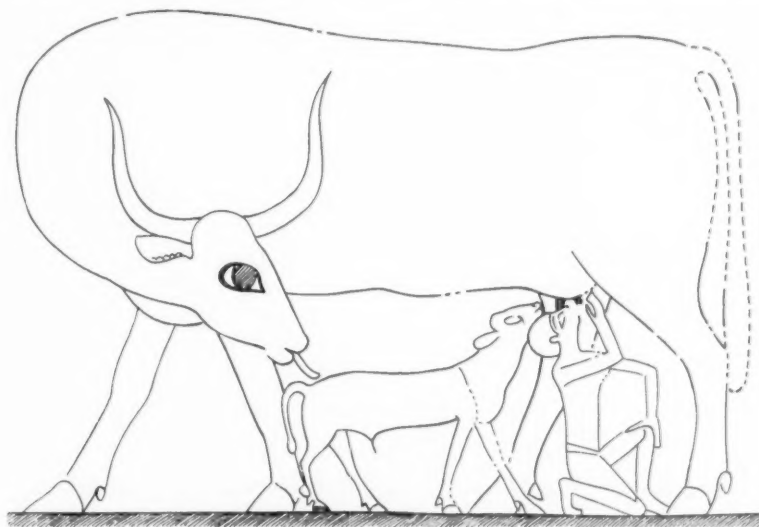


FIG. 10. FOSTER BROTHERS. FROM TOMB NO. 15 AT BENI HASAN

fat and sleek through his care for it. He has only a wisp of cloth to cover his nakedness, his hair wears off, his body acquires skeletal forms, and like the Scotch urchin he is so hun-

the boy has already had to learn. Life is hard; but ill fortune has lost its sting for him who knows how either to smile at it or to be patient under it. N. DE G. DAVIES.